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WEST VIRGINIA UNIVERSITY

CATALOGUE
1910 - - - 1911

ANNOUNCEMENTS
1911 - - - - 1912

THE COLLEGES.

MORGANTOWN, WEST VIRGINIA
PUBLISHED BY THE UNIVERSITY

ALLIED PRINTING TRADES UNION LABEL COUNCIL WHEELING

WHEELING NEWS LITHO. CO , WHEELING

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CALENDAR FOR 1911, 1912, 1913.

1911

JULY

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UNIVERSITY CALENDAR

1911

September 25, Monday.....Fall Quarter Begins
September 25, 26, 27, Monday, Tuesday, and Wednesday.....
.....Entrance Examinations
September 25, 26, 27, Monday, Tuesday, and Wednesday.....
.....Matriculation and Registration of Students
September 28, Thursday.....Recitations of Fall Quarter Begin
September 28, Thursday, 8:00 P. M.....Fall Convocation
November 30 to December 3.....Thanksgiving Recess
December 15, Friday.....Last Recitations of Fall Quarter
December 18, Monday, to December 20, Wednesday, inclusive...
.....Final Examinations of Fall Quarter
December 21, Thursday, to January 2, 1912.....Quarterly Recess

1912

January 3, Wednesday (Registration Day)....Winter Quarter Begins
January 4, Thursday.....Recitations of Winter Quarter Begin
January 4, Thursday, 8 P. M.....Winter Convocation
February 22, Thursday.....Washington's Birthday, a Holiday
March 22, Friday.....Last Recitations of Winter Quarter
March 23, Saturday, to March 26, Tuesday.....
.....Final Examinations of Winter Quarter
March 26, Tuesday.....Winter Quarter Ends
March 27, Wednesday, and March 28, Thursday.....Quarterly Recess
March 29, Friday (Registration Day).....Spring Quarter Begins
April 1, Monday.....Recitations of Spring Quarter Begin
April 1, Monday, 8 P. M.....Spring Convocation
May 30, Thursday.....Memorial Day, a Holiday
June 11, Tuesday.....Last Recitations of Spring Quarter
June 12, Wednesday, to June 15, Saturday, inclusive.....
.....Final Examinations of Spring Quarter
June 19, Wednesday.....Commencement

STATE BOARD OF CONTROL

JAMES S. LAKIN, President.....Charleston
E. B. STEPHENSON, Treasurer.....Charleston
JOHN A. SHEPPARD.....Charleston
L. V. REED, Secretary.....Charleston

STATE BOARD OF REGENTS

M. P. SHAWKEY, President.....Charleston
M. C. LOUGH, Secretary.....Fairmont
J. B. FINLEY.....Parkersburg
GEO. S. LAIDLEY.....Charleston
G. A. NORTHCOTT.....Huntington

OFFICERS OF ADMINISTRATION AND INSTRUCTION

THE OFFICERS OF THE UNIVERSITY

DANIEL BOARDMAN PURINTON, PH.D., LL.D., PRESIDENT
ROBERT ALLEN ARMSTRONG, A.M., L.H.D., CHAPLAIN
WAITMAN BARBE, LITT.D., DIRECTOR OF THE SUMMER SCHOOL
SUSAN MAXWELL MOORE, A.B., DEAN OF WOMEN
ALFRED JARRETT HARE, A.M., REGISTRAR
ALEXANDER REID WHITEHILL, PH.D., BURSAR
DAVID DALE JOHNSON, A.M., EDITOR OF THE UNIVERSITY BULLETIN
W. J. WHITE, ACCOUNTANT

THE UNIVERSITY COUNCIL

DANIEL BOABDMAN PURINTON
ALFRED JARRETT HARE
ALEXANDER REID WHITEHILL
WAITMAN BARBE
POWELL BENTON REYNOLDS
CHARLES EDGAR HOGG
FREDERICK WILSON TRUSCOTT
WILL HAZEN BOUGHTON
ROBERT ALLEN ARMSTRONG
WILLIAM S. WEEKS
E. DWIGHT SANDERSON

STANDING COMMITTEES

Classification and Grades

Jasper Newton Deahl — Clement Ross Jones
Alfred Jarrett Hare — Frank Butler Trotter
James Morton Callahan

Ways and Means

C. Edmund Neil — John Arndt Eiesland
William Patrick Willey — Frederick Lincoln Emory
Louis Black

Athletics

Chauncey William Waggoner — Anthony Wencel Chez
Aretas Wilbur Nolan — Dennis Martin Willis
William S. Weeks

Students' Aid

Russell Love Morris — Frederick Lawrence Kortright
William Jackson Leonard — Rufus West

Library

Lonna Dennis Arnett — Henry Sherwood Green
James Morton Callahan — Albert Moore Reese
Chauncey William Waggoner

Women Students

Susan Maxwell Moore — Grace Martin Snee
Margaret Buchanan — Louise Ferris Chez
Eva Emma Hubbard

Stationery and Printing

John Harrington Cox — Oliver Perry Chitwood
Simeon Conant Smith — Frank Butler Trotter
David Dale Johnson

THE FACULTY

*DANIEL BOARDMAN PURINTON, PH.D., LL.D. President's House

President and Professor of Philosophy

A.B., West Virginia University 1873; A.M., *ibid.*, 1876; Ph.D., University of Nashville, 1892; LL.D., Denison University, 1889. Instructor Preparatory Department of West Virginia University, 1873-8; Professor of Logic, *ibid.*, 1878-81; Professor of Mathematics. *ibid.*, 1881-5; Professor of Metaphysics, *ibid.*, 1885-9; Vice-President and Acting President, *ibid.*, 1881-2; Instructor in Vocal Music, *ibid.*, 1873-89; President, Denison University, 1890-1901; present position since 1901.

THOMAS EDWARD HODGES, A.M., D.Sc. 466 High Street

President Elect

A.B., West Virginia University, 1881; A.M., *ibid.*, 1884; D.Sc., Waynesburg College, 1909; Student, Cornell University, Summer, 1897; Principal, Morgantown Public Schools, 1881-6; Principal and Instructor in Natural Science and Pedagogy, Marshall College State Normal School, 1886-96; Professor of Physics, West Virginia University, 1896-1909; Member, State Board of Control of West Virginia, 1909-10; present position since 1911.

JAMES SCOTT STEWART, B.S., M.S 146 Willey Street

Professor of Mathematics, Emeritus

B.S., West Virginia University, 1877; M.S., *ibid.*, 1880. Assistant in Preparatory School, West Virginia University, 1877-91; Professor of Mathematics, *ibid.*, 1891-3; Superintendent of Schools, Fairmont, West Virginia, 1893-4; Professor of Mathematics, 1894-1907; present position since 1907.

WILLIAM PATRICK WILLEY, A.B., A.M. 250 Pleasant Street

Professor of Equity, Jurisprudence, and Commercial Law

A.B., Dickinson College, 1862; A.M., *ibid.*, 1865. Member Bar, Morgantown, West Virginia, and Baltimore, Maryland, 1866-78; present position since 1883.

POWELL BENTON REYNOLDS, A.M., D.D. 87 Grant Avenue

Professor of Economics and Sociology, Emeritus

A.M., West Virginia University, 1887; D.D., Richmond College, 1890; Student Richmond College, 1866-70; President Buckner College. 1884-5; Professor of English, West Virginia University, 1885-9; Vice-President and Professor of Metaphysics, *ibid.*, 1889-93; Acting President,, *ibid.*, 1893-5;Professor of Metaphysics and Political Science, *ibid.*, 1895--7; Professor of Philosophy, 1897-1901; Acting President 1901; Chaplain and Professor of Economics and Sociology, 1901-11; present position since 1911.

ALEXANDER REID WHITEHILL, A.M., PH.D. 128 Willey Street

Professor of Chemistry

A.B.. Princeton University, 1874; A.M., *ibid.*, 1877; Ph.D., Washington and Jefferson College, 1887; Graduate Student, University of Leipzig and Frieberg School of Mines, Germany, 1874-5; Professor of Experimental Science, University Mound College, 1876-81; Principal, Linsly Institute, 1881-5; present position since 1885.

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*Resigned to take effect August 31, 1911.

THOMAS CLARK ATKESON, M.S., PH.D. 234 Prospect Street

Professor of Animal Husbandry

LL.B., Kentucky University, 1874; Ph.B., Central Normal College, 1891; Ph.D., *ibid.*, 1893; M.S., Barboursville College, 1900; Student Kentucky Agricultural and Mechanical College, 1874-6. Professor of Agriculture, West Virginia University, 1891-3; President, Barboursville College, 1896-7; Dean of the College of Agriculture and Professor of Agriculture, 1897-1910; present position since 1910.

FREDERICK LINCOLN EMORY, M.M.E., M.E. 156 Foundry Street

Professor of Mechanics and Applied Mathematics

B.S., Worcester Polytechnic Institute, 1887; M.M.E., Cornell University, 1896; M.E., Worcester Polytechnic Institute, 1899. Director, Mechanical Department, Washington, D. C., High School, 1887-90; Superintendent Trades School, Concord Junction, Massachusetts, 1890-1; Professor of Mechanical Engineering and Mechanic Arts West Virginia University, 1891-3; Director, Indianapolis Industrial Training and Technical High School, 1893-5; Superintendent, Buildings and Grounds, West Virginia University, 1899-1910; present position since 1897.

SAMUEL BOARDMAN BROWN, A.B., A.M. 640 High Street

Professor of Geology and Mineralogy

A.B., West Virginia University, 1883; A.M., *ibid.*, 1886; Teacher of Language and Mathematics, Martinsburg, West Virginia, 1883-5; Principal, Glenville State Normal School, 1885-90; Assistant in Geology, West Virginia University, 1890-2; present position since 1892.

ROBERT ALLEN ARMSTRONG, A.M., L.H.D. 107 High Street

Professor of English Language and Literature and Head of the Department of English, and Chaplain

A.B., West Virginia University, 1886; A.M., *ibid.*, 1889; Graduate Student, University of Chicago, 1898; Columbian University, 1900; A.M., Harvard University, 1903; L.H.D., Allegheny College, 1908. Principal, West Liberty State Normal School, 1886-93; Professor of Mathematics, West Virginia University, 1893-4; Professor of English, West Virginia University, 1894-1901; Vice-President, *ibid.*, 1897-9; present position since 1901.

BERT HOLMES HITE, M.S. Peabody Hotel

Professor of Agricultural Chemistry

M.S., West Virginia University, 1890; Graduate Student, Johns Hopkins University, 1891-5; Fellow in Chemistry, *ibid.*, 1893-5. Chemist of West Virginia Agricultural Experiment Station since 1895; Vice Director, *ibid.*, since 1902; Professor of Organic Chemistry, West Virginia University, 1895-7; Chief Chemist, West Virginia Geological Survey since 1898; present position since 1897.

HENRY SHERWOOD GREEN, A.B., LL.D. 246 Fife Avenue

Professor of the Greek Language and Literature

A.B., Yale University, 1879; LL.D., Bethany College, 1901. Teacher of Latin and Greek, Hillman Academy, Wilkesbarre, Pennsylvania, 1879-1881; Principal, *ibid.*, 1881-6; Teacher in Preparatory School, Richmond, Kentucky, 1889-92; Acting Professor of Greek, Central University, Richmond, Kentucky, 1892-3; Principal of Harrodsburg Academy, Harrodsburg, Kentucky, 1893-6; Professor of the Greek Language and Literature, Bethany College, Bethany, West Virgnia, 1896-1900; Associate Professor of the Greek Language and Literature, West Virginia University, 1900-1; present position since 1901.

ALFRED JARRETT HARE, A.B., A.M. 411 High Street

Professor of the Latin Language and Literature

A.B., West Virginia University, 1889; A.M., *ibid.*, 1902; Graduate Student, Harvard University, 1900-1901. Assistant in Latin and Mathematics, Preparatory School, West Virginia University, 1889-96; Preparatory Professor of Ancient Languages and Mathematics, *ibid.*, 1896-8; present position since 1898.

FREDERICK WILLIAM TRUSCOTT, A.M., PH.D., 34 University Driveway

Professor of Germanic Languages and Literatures

A.B., Indiana University, 1891; A.M., *ibid.*, 1892; A.M., Harvard University, 1894; Ph.D., *ibid.*, 1896; Graduate Student of University of Berlin, 1896-8, 1900-1. Instructor in German, Indiana University, 1891-3; Assistant and Fellow in German, Harvard University, 1893-6 Assistant Professor of Germanic Languages and Literatures, West Virginia University, 1897-9; present position since 1899.

CLEMENT ROSS JONES, B.S.C.E., M.M.E. 262 McLane Avenue

Professor of Mechanical Engineering

B.S.C.E., West Virginia University, 1894; M.E., *ibid.*, 1897; M.M.E., Cornell University, 1900; Special Student in shop work, Worcester Polytechnic Institute, Summer, 1896; Special Student in Experimental Engineering, Stevens Institute of Technology, Summer, 1897; Associate Principal, West Virginia College, 1894; Assistant in Mechanical Engineering, West Virginia University, 1895-7; Instructor, *ibid.*, 1897-9; Assistant Professor of Mechanical Engineering, 1899-1901; present position since 1901.

WILL HAZEN BOUGHTON, B.S.C.E., C.E. 312 Park Street

Professor of Civil Engineering

B.S. (C.E.), University of Michigan, 1893; C.E., *ibid.*, 1898; Graduate Student in Mathematics, University of Chicago, Summer Quarters, 1898-9; Assistant Engineer of Maintenance of Way for the Cleveland, Cincinnati, Chicago and St. Louis Railway; Bridge and Structural Draftsman for the American Bridge Company and the Brown Hoisting Machinery Company; Consulting Engineer for County Court of Monongalia County, West Virginia; Consulting Engineer for Board of Education, Mongantown, West Virginia; Instructor in Mathematics and Civil Engineering, Denison University, 1894-1902; Assistant Professor of Civil Engineering, *ibid.*, 1902-3; present position since 1903.

RUSSELL LOVE MORRIS, B.S.C.E., C.E. 357 Front Street

Professor of Civil Engineering

B.S.C.E., West Virginia University, 1895; C.E., *ibid.*, 1898. Consulting Engineer, State Board of Agriculture; Assistant in Civil and Mining Engineering, West Virginia University, 1895-7; Assistant Professor of Civil and Mining Engineering, *ibid.*, 1897-1903; present position since 1903.

JOHN LEWIS SHELDON, A.M., PH.D. 299 Grand Street

Professor of Botany and Bacteriology

B.Pd., B.Sc., Ohio Northern University, 1895; B.Sc., University of Nebraska, 1899; M.Sc., Ohio Northern University, 1899; A.M., University of Nebraska, 1901; Ph.D., *ibid.*, 1903. Instructor, in Mathematics, Mount Hermon (Mass.) School, 1892-4; Instructor in Botany, Preparatory School to the State University (Nebraska), 1898-9; Acting Head of the Department of Biology, Nebraska State Normal School, 1899-1900; Instructor in Botany, University of Nebraska, 1900-3; Fellow in Botany, *ibid.*, 1900-3; Professor of Bateriology and Bateriologist of the West Virginia Agricultural Experiment Station, 1903-7; present position since 1907.

JASPER NEWTON DEAHL, A.M., PH.D. 414 Park Street

Professor of Education

A.B., University of Nashville, 1889; A.B., Harvard University, 1893; Higher Diploma, Teachers College, Columbia University, 1899; A.M., Columbia University, 1899; Ph.D., *ibid.*, 1906. Fellow in Education, Teachers College, Columbia University, 1899-1900; Principal, West Liberty State Normal School, 1893-8; Assistant Professor of Education, West Virginia University, 1901-2; Associate Professor of Education, 1902-3; present position since 1903.

SUSAN MAXWELL MOORE, A.B. 247 Willey Street

Dean of Women

A.B., West Virginia University, 1909; Student in Peabody Institute, Baltimore, Maryland, 1878-9; Student in New England Conservatory, Boston, Massachusetts, (Piano, Carl Faelten, Organ, George E. Whiting), 1885-7; Teacher of Piano, Mount Holyoke College, Massachusetts, 1887-91; Student in Berlin (Piano, Oscar Raif), 1891-2; Teacher of Piano, Conservatory of Music, Ottumwa, Iowa, 1892-3; Head of Piano Department, Shepardson College and Denison University, Granville, Ohio, 1893-1903; Dean of Conservatory, Denison University, 1901-3; Summer Course under Carl Faelten, Boston, Massachusetts, 1898; Faelten Piano School, Summer, 1901; present position since 1903.

JAMES MORTON CALLAHAN, A.M., PH.D. 93 Logan Avenue

Professor of History and Political Science

A.B., University of Indiana, 1894; A.M., *ibid.*, 1895; Ph.D., Johns Hopkins University, 1897; Graduate Student, Chicago University, 1894; Johns Hopkins, 1894-7. Chair of History and Civics, Southern Indiana Normal College, 1890-2; Assistant and Fellow, Johns Hopkins University, 1895-7; Acting Professor of American History and Constitutional Law, Hamilton College, 1897-8; Lecturer on Diplomatic History and International Relations, Johns Hopkins University, 1898-1901; Director, Bureau Historical Research, Washington, D. C., 1900-2; Associate Professor, West Virginia University, 1902-3; present position since 1903.

ANTHONY WENCEL CHEZ, A.B. 748 North Front Street

Director of Physical Training

Graduate Chautauqua School of Physical Education, 1902; Graduate, Harvard School of Physical Training, 1903; A.B., West Virginia University, 1907. Graduate Coach, Oberlin College, 1899; Director of Gymnasium and Athletic Coach Wabash College, 1900-1; Professor of Physical Training and Athletic Coach De Pauw University, 1901-2; Director of Physical Culture and Athletic Coach, University of Cincinnati, 1902-4; Assistant, Harvard Summer School of Physical Training, 1905; present position since 1904.

JOHN NATHAN SIMPSON, A.B., M.D. 293 High Street

Professor of Anatomy and Physiology

A.B., University of Nashville, 1893; M.D., Johns Hopkins University, 1902. First Assistant in Marshall College, 1893-7; Instructor in Anatomy and Physiology, West Virginia University, 1902-3; Associate Professor, 1903-4; present position since 1904.

JOHN HARRINGTON COX, PH.B., A.M. 188 Spruce Street

Professor of English Philology

Graduate, Illinois State Normal University, 1891; Ph.B., Brown University, 1897; A.M., Harvard University, 1900. Educational Director, Twenty-Third Street Branch Young Men's Christian Association, New York City, 1897-9; Graduate Student, Harvard University, 1899-1901; Professor of the English Language and Literature, University of North Dakota, 1901-2; Instructor of English Philology, West Virginia University, 1902-3; Associate Professor of English Philology, 1903-4; present position since 1904.

CHARLES EDGAR HOGG, LL.D. 498 Grand Street

Dean of the College of Law and Professor of Common Law Pleading, Court Practice and Federal Procedure

LL.D., Temple University, 1907; present position since 1906.

FREDERICK LAWRENCE KORTRIGHT, B.S., D.Sc. 234 Jackson Avenue

Professor of Chemistry

B.S., Cornell University, 1890; D.Sc., *ibid.*, 1895; Graduate Student, Polytechnicum, Switzerland, 1899-1900, and Technische Hochschule, Carlsruhe, Germany, 1900. Assistant in Chemistry, Cornell University, 1890-1; Chemist, Solvy Process Company, 1891-2; Assistant in Chemistry, Cornell University, 1892-3; Instructor in Chemistry, *ibid.*, 1893-9; Assistant Professor of Chemistry, West Virginia University, 1900-2; Associate Professor of Chemistry, *ibid.*, 1902-7; present position since 1907.

FRANK BUTLER TROTTER, A.B., A.M. 502 High Street

Professor of Latin

A.B., Roanoke College, 1890; A.M., *ibid.*, 1895; Graduate Student, Harvard University, 1891-2. Professor in West Virginia Wesleyan College, 1890-1907, and Vice-President, *ibid.*, 1894-1907; present position since 1907.

JOHN ARNDT EIESLAND, PH.B., PH.D. 23 Demain Street

Professor of Mathematics

Ph.B., University of South Dakota, 1891; Graduate Student, Johns Hopkins University, 1892-5 and 1897-8; Ph.D., Johns Hopkins University, 1898. Taught in public schools of Norway; Teacher in Luther Academy, Minnesota, 1891-2; Professor Mathematics in Thiel College, Greenville, Pennsylvania, 1895-1903; Instructor in Mathematics in United States Naval Academy, 1903-7; present position since 1907.

ALBERT MOORE REESE, A.B., PH.D. 293 Willey Street

Professor of Zoology

A.B., Johns Hopkins University, 1892; Ph.D., *ibid.*, 1900; Lecturer in Chemistry, Southern Homeopathic Medical College, 1892-6; Lecturer in Histology and Embryology, Pennsylvania College, 1896; Professor of Biology and Geology, Allegheny College, 1901-2; Instructor in Histology and Embryology, Syracuse University, 1902-3; Associate Professor of Histology and Embryology, *ibid.*, 1903-7; present position since 1907.

OLIVER PERRY CHITWOOD, A.B., PH.D. East Prospect Street

Professor of European History

A.B., William and Mary College, 1899; Ph.D., Johns Hopkins University, 1905; Librarian of William and Mary College, 1898-9; Headmaster, Richmond Academy, 1902-3; Fellow in History, Johns Hopkins University, 1904-5; Professor of History and Political Economy, Mercer University, 1905-7; present position since 1907.

CHARLES EDMUND NEIL, A.B., A.M. Madera Hotel

Professor of Elocution and Oratory

A.B., McKendree University, 1895; A.B., Ohio Wesleyan University, 1897; Private pupil of Leland T. Powers, 1895-8 (Summers); A.M., Ohio Wesleyan University, 1908. Instructor in Elocution, Ohio Wesleyan University, 1895-6; Assistant Professor of Oratory, Ohio Wesleyan School of Oratory, 1896-7; Professor of Elocution, Denison University, 1897-8; Professor of Oratory and Elocution, Denison University, 1901-3; Assistant Professor of Elocution and Oratory, West Virginia University, 1903-4; Associate Professor of Elocution and Oratory, West Virginia University, 1904-8; present position since 1908.

JAMES RUSSELL TROTTER, LL.B., PH.D. 15 Demain Street

Professor of Law

A.B., West Virginia University, 1891; A.B., Harvard University, 1895; A.M., *ibid.*, 1896; LL.D., and Ph.D. West Virginia University, 1902. Instructor in West Virginia Conference Seminary, 1891-2; Principal Clarksburg High School, 1892-4; State Superintendent of Free Schools of West Virginia, 1897-1901; present position since 1908.

EDWIN FAYETTE CHURCH, JR., B.S., M.S. 336 Park Street

Professor of Machine Design

B.S., Massachusetts Institute of Technology, 1901; M.S., *ibid.*, 1909. Draftsman and Assistant to Chief Engineer, William Cramp and Sons, Philadelphia, 1901-3; Draftsman, I. P. Morris Company, Philadelphia, 1903; Instructor in Marine and Mechanical Engineering and Naval Architecture, Lehigh University, 1903-4;Assistant Professor of Mechanical Engineering, West Virginia University, 1904-6; Associate Professor of Mechanical Engineering, *ibid.*, 1906-9; present position since 1909.

WILLIAM ELMORE DICKINSON, A.B., M.M.E. 334 Park Street

Professor of Electrical Engineering

A.B., College of William and Mary, 1901; M.E.-E.E., Cornell University, 1904; M.M.E., *ibid.*, 1909; Student Apprentice Stanley Electrical Manufacturing Company, Pittsfield, Massachusetts, 1903. Member of Testing Corps, Electric Railway Test Commission, Louisana Purchase Exposition, 1904; Assistant Engineer, Westinghouse, Church, Kerr and Company, New York, 1904-5; Instructor in Electrical Engineering, West Virginia University, 1905-6; Assistant Professor of Electrical Engineering, *ibid.*, 1906-7; Associate Professor of Electrical Engineering, *ibid.*, 1907-9; present position since 1909.

CHAUNCEY WILLIAM WAGGONER, A.M., PH.D.
727 North Front Street

Professor of Physics

B.S.E.E., Ohio University, 1904; A.M., Cornell University, 1905; Ph.D., *ibid.*, 1900; University Graduate Scholar in Physics, Cornell University, 1904-5. Research Engineer for Western Electric Company, New York, Summer, 1907; Instructor in Physics, Cornell University, 1905-9; present position since 1909.

ROBERT BRUCE BRINSMADE, B.S., E.M. 136 High Street

Professor of Mining Engineering

B.S., in Mining, Washington University, 1894; E.M., Lehigh University, 1895. Engineer, Standard Paving Brick Company and Acetylene Gas Company, St. Louis, Missouri, 1895-6; Chemist. Combination Mining Company, Montana, 1896; Mining Engineer for Parrott Mines, Anaconda Mines, and W. A. Clark, Butte, Montana, and for War Eagle Mines, Rossland, B. C., 1897-1900; Assistant Manager, Missouri Lead Fields Company, Elvins, Missouri, 1900; Superintendent, Cia Minas y Fundicion, Cordoba, Argentina, South America, 1902; Superintendent, Rossie Iron Mines, New York, 1905; Professor of Mining Engineering, New Mexican Mining School, 1906; Director Wisconsin Mining Trade School, 1908; Mine Exploration, San Domingo, W. I., 1909; present position since 1910.

WILLIAM SEWARD WEEKS, B.S. 258 McLane Avenue

Second Lieutenant, Fourth Infantry, United States Army, Professor of Military Science and Tactics, and Commandant of Cadets

B.S., United States Military Academy, 1905; Second Lieutenant, Fourth Infantry, 1905-10; present position since 1910.

EDWARD DWIGHT SANDERSON, B.S., B.S.AGR. 504 High Street

Dean of the College of Agriculture

B.S., Michigan Agricultural College, 1897; B.S., Agr., Cornell University, 1898. Assistant State Entomologist, Maryland, 1898-9; Entomologist, Delaware Agricultural Experiment Station, and Professor of Zoology, Delaware College, 1899-1902; State Entomologist, Texas, 1902-4; Professor of Zoology and Entomology, New Hampshire College, 1904-10; Director, New Hampshire Agricultural Experiment Station, 1907-10; present position since 1910.

MADISON STATHERS, A.B., PH.D. 121 Park Street

Professor of Romance Languages

A.B., West Virginia University, 1901; Graduate Student in Paris and Grenoble, France, Summer of 1904, and Grenoble, 1904-5; Ph.D., University of Grenoble, France, 1905; Graduate Student in Madrid, 1905 and 1910. Instructor in West Virginia Conference Seminary, 1902-3; Professor of Romance Languages, West Virginia Wesleyan College, 1903-6; Instructor in Romance Languages, West Virginia University, 1906-7; Assistant Professor of Romance Languages, *ibid.*, 1907-10; present position since 1910.

WAITMAN BARBE, A.M., LITT.D. Peabody Hotel

Director of the Summer School and Professor of English

B.S., West Virginia University, 1884; M.S., *ibid.*, 1887; A.M. 1897; Litt.D., Denison University, 1904; Graduate Student, Harvard University, 1901; Graduate Student, Oxford University, England, 1908-9. Field Agent, West Virginia University, 1895-8; Assistant to the President and Associate Professor of the English Language and Literature, 1898-1910; present position since 1910.

ENOCH HOWARD VICKERS, A.B., A.M.,
484 Grand Street, South Park

Professor of Economics and Sociology

A.B., West Virginia University, 1890; Instructor West Virginia University, 1890-92; Graduate Student, Harvard University, 1892-95; A.B., *ibid.*, 1893; A.M., *ibid.*, 1894. Assistant in Government and Law, Harvard University, 1894-95; Robert Treat Paine Fellow in Social Science and Non-Resident Student of Harvard University at Berlin University, Germany, 1895-96; at Paris, France, 1896-98; Professor of Economics, Keiogijuka University, Tokyo, Japan, 1898-1910; present position since 1911.

WILLIAM JACKSON LEONARD 36 University Driveway

Associate Professor of Fine Arts

Student, The Cowles Art School, Boston, 1889-90; Pupil of Jean Paul Laurens and Benjamin Constant, Paris, 1891-3; Student, Academie Julien and Ecole des Beaux Arts, Paris; Special Student Harvard University. Instructor in Fine Arts, West Virginia University, 1900-2; present position since 1902.

DANIEL WEBSTER WORKING, B.Sc., A.M. 35 Maple Avenue

Superintendent of Agricultural Extension Work

B.Sc., Kansas State Agricultural College, 1888; A.M., University of Denver 1907; Attended Graduate School of Agriculture at Cornell University, session of 1908, and at Iowa State College, session of 1910. Editor, Colorado Farmer and Live Stock Journal, 1889-91; Secretary, Colorado State Board of Agriculture, Agricultural College, and Experiment Station, 1893-97, Editor, Irrigation Review, 1897-98; Superintendent of Schools Arapahoe County, Colorado, 1905-7; present position since 1907.

SIMEON CONANT SMITH, A.B., A.M. 107 High Street

Associate Professor of Rhetoric

A.B., Tufts College, 1898; A.M., West Virginia University, 1902; Graduate Student, Harvard University, 1903-4. Fellow in Rhetoric and Elocution, West Virginia University, 1899-1900; Instructor in Rhetoric and Assistant in English in the Preparatory School, 1900-6; Assistant Professor of Rhetoric, 1906-9; present position since 1909.

LLOYD LOWNDES FRIEND, A.B., A.M. Charleston

Associate Professor of Secondary Education and State Supervisor of High Schools

A.B., West Virginia University, 1897; A.M., Columbia University, 1906. Instructor in English, Preparatory Schools, West Virginia University, 1897-1902; Principal Keyser Preparatory School West Virginia University, 1902-5; Assistant to the State Superintendent of Schools of West Virginia, 1907-9; present position since January 1, 1910.

ARETAS WILBUR NOLAN, A.M.

Associate Professor of Agricultural Education and Forestry

A.B., Indiana University, 1905; A.M., West Virginia University, 1909; Graduate Student, Winona Biological Station, 1906; Graduate Student, Columbia University, 1907. Principal and Instructor in Biology, High School, Cayuga, Indiana, 1900-3; Superintendent and Instructor in Agriculture, Township Consolidated High School, Howe, Indiana, 1903-8; Assistant Professor of Horticulture, Forestry and Economic Entomology, West Virginia University, 1908-10; present position since 1910.

DENNIS MARTIN WILLIS, A.B., LL.M. 242 Jackson Avenue

Head of the Department of Commerce

LL.B., West Virginia University, 1899; A.B., *ibid.*, 1905: LL.M., *ibid.*, 1908. Instructor, West Virginia Conference Seminary, Buckhannon, 1891-2; Instructor Northwestern Academy, Clarksburg, 1893-4; Principal of Commercial School, West Virginia University, 1895-1910; present position since 1910.

FREDERICK RANDOM WHIPPLE, M.D.V. 100 Beverly Avenue

Assistant Professor of Veterinary Science

M.D.V., McKillip Veterinary College, 1902. Assistant in the department of Pharmacology, *ibid.*, 1902; United States Government Veterinarian, 1906-07; Consulting Veterinarian, West Virginia State Board of Agriculture, 1909; Instructor in Veterinary Science, West Virginia University, 1907-9; present position since 1909.

DAVID DALE JOHNSON, A.B., A.M. 305 Fayette Street

Assistant Professor of English and University Editor

A.B., Marietta College, 1896; A.M., West Virginia University, 1903; A.M., Marietta College, 1906; Graduate Student, University of Chicago, 1899 and 1902, Harvard University, 1908. Instructor in Latin and Sciences, Parkersburg High School, 1896-7; Instructor in German and Latin, Marietta Academy, 1897-8; Instructor in English, Parkersburg High School, 1898-1902; Assistant in English, West Virginia University, 1902-7; Instructor in English, 1907-10; present position since 1910.

CLYDE EMIL WATSON, M.D.

Assistant Professor of Anatomy and Pathology

B.S., West Virginia University, 1905; M.D., Johns Hopkins University, 1910; Interne in the Samuel Merritt Hospital, Oakland, California, July-December, 1910; present position since 1910.

*CLARENCE POST, A.B. 45 Stewart Street

Instructor in Physics

A.B., West Virginia University, 1907; Graduate Student, Cornell University, Summer of 1907; present position since 1907.

CHARLES AUGUSTUS LUEDER, D.V.M. 752 North Front Street

Instructor in Dairying and Veterinary Science

D.V.M., Cornell University, 1902; Graduate Student, Cornell University, 1903. Instructor in Dairying, West Virginia University, 1908-9; present position since 1909.

THOMAS HOWARD CATHER 394 Willey Street

Instructor in Machine Shop and General Foreman of Shops

Apprentice, Baltimore and Ohio Railroad, Grafton, West Virginia, 1887-91; Machinist, Burlington Railroad in Missouri and Union Pacific Railroad, 1891-3; Chicago, Rock Island and Pacific Railroad, Horton, Kansas, 1893-5; Cotton Belt Railroad, Pine Bluff, Arkansas, 1895-7; Navy Yard, Washington, D. C., 1898; Foreman, Baltimore and Ohio Erecting Shop, Grafton, West Virginia, 1899-1902; Foreman of the Machine Shop, 1902-9; present position since 1909.

JOHN BEHNY GRUMBEIN, B.S.M.E. 195 Grant Avenue

Instructor in Mechanical Engineering and Foreman of the Wood Shop

B.S.M.E., West Virginia University, 1909. Apprentice, Orr, Painter and Company, Reading, Pennsylvania, 1895-8; Pattern Maker, Harrisburg Foundry and Machine Company, 1898-9; Robert Wetherel and Company, Chester, Pennsylvania, 1899; Ingersoll-Sergeant Drill Company, Easton, Pennsylcania, 1899-1900; Foreman of Pattern Shop, Blaisdell Machinery Company, Bradford, Pennsylvania, 1900-3; Foreman of the Wood Shop, 1903-9; present position since 1909.

ARTHUR ROLLINS GRAVES, A.B., A.M. 220 Prospect Street

Instructor in German

A.B., Wesleyan University, 1908; A.M., Harvard University, 1910; Student, Marburger Ferienkurse, Marburg, Germany, Summer of 1909. Teacher of German, High School, Medford, Massachusetts, Spring of 1909; present position since 1909.

ARLEIGH LEE DARBY, A.B., A.M. Brand Building

Instructor in Romance Languages

A.B., Waynesburg College, 1899; A.M., Waynesburg College, 1903; A.B., University of Chicago, 1906; Student in University of Grenoble, France, and in Rome, Italy, Summer and Fall of 1904. Assistant Professor of Latin and Greek, Waynesburg College, 1899-1903; Assistant Professor of Latin, Miami University, Summer of 1907; Professor of Latin and French, Waynesburg College, 1903-9; present position since 1909.

BENJAMIN WALTER KING, A.B. 185 Grant Avenue

Instructor in Commerce and Secretary to the President

A.B., West Virginia University, 1909. Assistant Secretary to the President, 1906-8; Secretary and Acting Assistant to the President, 1908-9; Assistant in Shorthand and Typewriting and Secretary to the President, 1909; present position since 1910.

RACHEL HARTSHORN COLWELL, B.S., A.M. President's House

Instructor in Domestic Science

Diploma from Boston Cooking School, Boston, Massachusetts, 1899; B.S., Denison University, 1903; Diploma in Domestic Science, Teachers' College, Columbia University, 1905; A.M., Columbia University, 1905; Graduate Student Columbia University, 1906-8. Head of Demestic Science Department and Supervisor of Boarding Club, Michigan Agricultural College, 1905-6; Assistant in Teachers' College, Columbia University, 1906-8; present position since 1910.

*On leave of absence until September 1912.

MARGARET BUCHANAN, A.B. 304 Willey Street

Instructor in Greek and Mathematics

A.B., West Virginia Universtiy, 1906. Teacher in in Marshall College, 1906-7; Assistant in Greek and Mathematics, West Virginia University, 1907-9; present position since 1909.

THOMAS BOND FOULK, B.S.C.E. 509 Front Street

Instructor in Mathematics and Graduate Manager of Athletics

B.S.C.E., West Virginia University, 1908. Assistant in Mathematics in the Preparatory School and Graduate Manager of Athletics, West Virginia University, 1908-9; present position since 1909.

CHARLES MOON, B.S.C.E. 23 Cobun Avenue

Instructor in Physics

B.S.C.E., West Virginia University, 1910; present position since 1910.

LOUISE FERRIS CHEZ 748 North Front Street

Assistant Director of Physical Training, in charge of the Women's Gymnasium

Graduate, Chautauqua School of Physical Education, 1902; Graduate work in Massage and Swedish System. Assistant to Jakob Bolin of New York City in Clinic of Corrective and Orthopedic Gymnastics, 1903; Director of Physical Training for Women, De Pauw University, 1901-2; Director of Physical Culture for Women, University of Cincinnati, 1903-4; present position since 1904.

RUFUS ASA WEST 181 First Street

Assistant in Metal Working and Stationary Engineer

Apprentice, Fairchild, Lawhead and Company, Carriage Builders, 1887-90; Blacksmith, Tygart Mfg. Co., 1890-2; Special Student, Springs Garden Institute, Summer, 1897; Head Stationary Engineer, National Export Exposition at Philadelphia, Fall, 1899; present position since 1892.

URIAH BARNES, LL.B. 4 Ash Street

Asistant in Law

LL.B., Illinois College of Iaw, 1907; present position since 1908.

FLORA RAY HAYES, A.B. 480 High Street

Assistant in Music

A.B., West Virginia University; Graduate West Virginia University School of Music, 1904; Pupil, John Porter Lawrence, Summer of 1905; Pupil at Berlin, Germany under Barth, Scharwenka and Hugo Kaun, 1905-6. Head of Music Department, Marshall College, 1907-9; present position since 1910.

NORESH CHANDRA ATORTHY, D.V.M.

Assistant in Veterinary Science

Graduate of the Bengal Veterinary College, Calcutta, India, 1906; D.V.M., Ohio State University, 1909; Student, University of Pittsburg, 1909-10. Chief Veterinarian of Balasore, British Government, 1907-8; Registered Practitioner in the State of Pennsylvania; present position since 1911.

LIBRARY STAFF

LONNA DENNIS ARNETT, B.S., PH.D. 174 Front Street

Librarian

B.S., West Virginia University, 1898; Ph.D., Clark University, Worcester, Massachusetts, 1903; Student, New York State Library School 1908-9. Assistant Librarian, United States Department of Education, 1909-10; present position since 1910.

JESSICA GARDINER CONE 324 Willey Street

Assistant Librarian

Vassar College, 1879-80; New York State Library School Diploma, 1897. Library Organizer and Cataloguer, 1897-1904; present position since 1904.

DORA MOORE, PH.B. 324 Willey Street

Assistant Librarian

Ph.B., Denison University, 1903; Student in Summer School, West Virginia University, 1905; Course in Library Science, New York State Library, School, 1906-7. Present position since 1907.

KATHERINE CLIFTON HEDRICK Woman's Hall

Assistant in Law Library

Private Secretary to President of West Virginia Supreme Court of Appeals, 1896-1901; Reporter of Supreme Court Decisions for the Law Journal of West Virginia Bar Association, 1897-1901; present position since 1903.

ANNA GRACE COX 22 Third Street

Assistant Librarian

WILLIAM J. WHITE Marion Street

Accountant

JOHN HOWARD HOLT, JR. 230 Kirk Street

Assistant Secretary to the President

EVERETT JAMES SIMONDS, B.S. 115 Beverly Avenue

General Secretary, Young Men's Christian Association

B.S., Nebraska Wesleyan University, 1905; Graduate Student, Yale University, 1909-10; Attended Training School, Young Men's Christian Association Secretaries, Summers of 1907 and 1908. Secretary, Young Men's Christian Association, State College of Nebraska, 1905-1909; Social Secretary, New Haven, Connecticut, City Young Men's Christian Association, 1909-10; present position since 1910.

THE UNIVERSITY

HISTORICAL SKETCH

FOUNDATION

West Virginia University originated from the national land grant act of July 2, 1862, and the subsequent action of the state legislature in accepting and carrying out the provisions of the act, and from the foundations of an educational institution which had already been laid at Morgantown for half a century.

The act of 1862 granted lands or land script to each state in proportion to the number of its senators and representatives in Congress. The proceeds of the sale of these lands were to be invested in safe stocks yielding not less than five per cent upon the par value of the stocks and this interest "inviolably appropriated by each state which may take and claim the benefit of this Act to the endowment, support and maintenance of at least one college where the leading objects shall be, without excluding other classical and scientific studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts in such manner as the legislature of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

On October 3, 1863, the West Virginia legislature, empowered by the constitution to foster education and organize institutions of learning in the interest of the people of the state, accepted the conditions of the act of Congress and appropriated $500.00 to defray the expenses of procuring and selling the land script and of investing the proceeds. Congress by act of April 14, 1864, extended the preceding act to West Virginia, and the latter received land script for 150,000 acres. By joint resolution of January 24, 1867, the legislature submitted to Congress strong reasons for an additional appropriation, but the appeal was without success.

Steps were soon taken to select a location for the college. Among the towns which made substantial offers to secure it was Morgantown, which was already the seat of Monongalia Academy (incorporated by the Virginia legislature November 29, 1814), Morgantown Female Seminary (established 1831 and incorporated 1839), and Woodburn Female Seminary (incorporated January 4, 1858). On January 9, 1866,

the board of trustees of the Monongalia Academy tendered to the legislature, for the use of the college, all its property, including Woodburn Female Seminary, estimated at $51,000, on condition that the college should be located at Morgantown. On January 30, 1867, the legislature accepted the property, and on February 7 passed an act permanently establishing the "Agricultural College of West Virginia," and authorizing the governor to appoint eleven suitable persons, one from each senatorial district, to constitute a board of visitors. The powers and duties of the board were clearly defined by the act and were largely the same as the subsequent powers and duties of the regents, except that the board was a close corporation filling vacancies produced by death of members, and each year electing two new members to fill the places made vacant by lot.

The eleven visitors were soon appointed and on April 3, 1867, held their first meeting at Woodburn Seminary. After the selection of Alexander Martin as president, they proceeded to discuss what style and character the college should assume—whether it should be for the exclusive purpose of training farmers and soldiers, or whether it should offer instruction in all the subjects that were generally understood to belong to the curriculum of a "college," comprising every essential department of education from the foundation upwards. They decided upon the latter. In addition to the preparatory department, in the academy building, they established "three distinct and separate departments of instruction in the college building": (1) collegiate; (2) scientific; (3) agricultural. They also provided for instruction in military tactics. They intended to establish primarily a college that would meet the needs of general education in West Virginia and that would eventually, by expansion, "be able to educate liberally young men in all the professions and pursuits of life."

By an act of March 3, 1868, the legislature appropriated $6,000 for the general use of the college, to be spent as the board might direct, and $10,000 to supplement the permanent endowment. A subsequent act (June 25, 1868), in order to provide better facilities, authorized the sale of Monongalia Academy and dwelling, and the application of the proceeds to the construction of another building on the main college grounds. In the following July the Academy building and grounds were sold to the board of education of Morgantown. Soon thereafter, in the presence of a large assemblage, the corner stone of Martin hall was laid.

GOVERNMENT

By the act of December 4, 1868, which changed the name of the college to "West Virginia University," the name of the "board of visitors" was changed to the "board of regents," with duties and powers defined practically as at present, and provision was made that vacancies in the board should be filled by the governor. On April 12, 1873, an act amending the school law contained a provision that the board of regents should consist of one person from each of the nine judicial circuits, to be appointed by the "board of the school fund;" but by an act of February 17, 1877, the power of appointment was conferred upon the governor with the advice and consent of the senate.

By an act of March 2, 1877, it was provided that the board should consist of one person from each senatorial district, to be appointed by the governor as provided by law; and that the board should be changed regularly by the retirement of two members each year after June 30, 1877. Vacancies on the board were to be filled by the governor as before. From 1877 to 1882, under this law there were twelve regents. From 1883 to June 1, 1895, there were thirteen.

The first bi-partizan board was created by the legislature of 1895 and began its term on June 1 of that year. Its members were divided into three groups, one of which was replaced every second year.

The act of 1901 provided for the appointment of a new board of nine members, "who shall be residents and voters of the state," and "who shall be divided into two classes consisting of four and five regents respectively." The term of office of the first class continued for two years, and the term of the second class for four years; and thereafter, the term of office of each class was to be four years (and until their successors were appointed and qualified). It was also provided that not more than six regents should be of the same political party and that "not more than one shall be appointed from the same senatorial district or county."

By legislative act of 1909 an important change was made in the control of the University. Under this act the financial and business affairs of the University and of all the other state educational institutions are directed by a state board of control consisting of three members appointed by the governor. This board also exercises a general control over the various public institutions of the state. The academic control of the University and also of the other educational institutions of the state, with the exception of the School for the Deaf, Dumb, and Blind, The Boys' Reform School, and The Girls' Industrial School, is vested in a single board of regents. The board is bi-partisan and consists of the state superintendent of free schools (ex officio), who is elected by the people, and of four other members

who are appointed by the governor and are responsible to him for the proper conduct of their duties. This board chooses its own chairman or president.

From 1877 to 1896 there was a standing executive committee which assisted in the administration of the University and reported to the board. Until 1886 its membership was local and did not include the president, except from 1868 to 1873. After 1886 its members were also members of the board of regents, except in 1894-5, when the secretary of the committee was a professor in the University. The number of members varied, starting with five, increasing to nine and finally decreasing to three.

The administrative offices created at the time of the establishment of the University were those of the president, the vice president, the principal of the preparatory school, and the superintendent of buildings and grounds. The office of vice president was abolished in 1899. In 1897 the office of assistant to the president was established.

The University has had eight regular presidents. Alexander Martin resigned in 1875. He was succeeded by John W. Scott, (acting president), 1875-7; John Rhey Thompson, 1877-81; Daniel Boardman Purinton (acting president), 1881-2; William L. Wilson, 1882-3; Robert C. Berkeley (chairman of the faculty), 1883-5; Eli Marsh Turner, 1885-93; Powell Benton Reynolds (acting president), 1893-5; James L. Goodnight, 1895-7; Jerome Hall Raymond, 1897-1901;Daniel Boardman Purinton, 1901-11; Thomas Edward Hodges, 1911.

The powers and responsibilities of the president have been greatly increased within recent years. The administrative duties, at first shared by the faculty or the local committee, and from 1899 to 1901 by twenty-three or more efficient but inharmonious committees, have been wisely and satisfactorily unified and placed under the control of the president. Since December 1, 1901, he has acted with the aid of an assistant, a council of advisers, several standing committees, heads of departments, a registrar, and a treasurer or bursar.

As the college expanded from local and traditional conditions the strict rules and discipline of the earlier years became unnecessary, and a more efficient system of administration and co-operation was gradually developed. The strict curriculum of the earlier years and the loose separate-school elective system (the Virginia plan) which replaced it in June, 1882, have both given way to a partially elastic system in which, since 1895, the choice of studies by the student is under the oversight and direction of a "class officer," who requires that prescribed courses shall be taken in order, and supervises the selection and arrangement of elective courses.

GROWTH.

For many years the growth of the new institution was very slow and uncertain. This was due to many causes. Among these may be enumerated the partially local foundation, the sectional questions which had divided Virginia long before the war, the new sectional jealousies, the post-bellum political questions and partisanship, the lack of a satisfactory system of secondary schools, the divided responsibility and *laissez faire* policy, and the lack of means of communication with Morgantown. Gradually the power and importance of these causes were reduced by changing conditions. Industrial progress has been a prominent factor in the transformation of the earlier school into a real college.

The University has been greatly aided by the development of better secondary schools. The normal schools have partly solved the problem of suitable preparatory schools for the University. The preparatory school at Montgomery, opened January, 1897, was established by an act of February 16, 1895. Another school was established at Keyser by an act of 1901.

The most remarkable increase in the attendance of the University was coincident with the admission of women. In 1889 women were admitted to the collegiate department. In 1895-6 they were admitted to the college of law. In 1897 they were admitted to the preparatory school and to the schools of music and fine arts.

The phenomenal increase of attendance after 1895 was largely due to the work of the newly created office of field agent of the University and to the addition of new departments. It is instructive to trace how the five departments with which the University started in 1867 have increased to more than twenty-five by expansion and differentiation. The dates of the establishment of the special colleges and schools now comprised in the University are as follows: the college of law, 1878; the college of engineering, 1887; the agricultural experiment station, 1888; the college of agriculture, 1897; the school of music, 1897; the school of fine arts, 1897; the college of medicine, 1900; the school of agriculture, 1911. The college of medicine was discontinued in 1911.

BUILDINGS

The problem of securing suitable buildings to meet the needs of expansion has been a continuous one. The supply has never exceeded the demand.

Martin Hall was completed in 1870. The first armory building, now the south end of the Experiment Station, begun in 1873, was finished and occupied in 1874. On June 18, 1874, the corner stone of Woodburn Hall was laid on the site of the Woodburn Seminary

building, which had burned in February, 1873. The central part was completed by June, 1876, and the upper floor was used as the commencement auditorium until 1890. As the appropriation was exhausted the two wings were not built at that time.

An addition to the Experiment Station was completed by 1889. In the latter part of the same year Commencement Hall was begun on the grounds purchased in June, 1887, and was completed in 1892.

A wing of the old Mechanical Building, which stood near the river, was ready by September, in 1893, and an addition was finished in 1894. Science Hall was finished and equipped in the summer of 1893. In 1894 all the buildings of the University with their equipments had cost over $250,000, but they were not sufficient to meet the growing needs of the new University.

Early in 1898 work was begun on the north wing of Woodburn Hall. It was completed in 1900 and furnished a home for the music school, which had previously occupied rented rooms on Main street. In 1898 the regents purchased seven acres of the Fife land, on which were two small buildings. After the burning of the old Mechanical Building in 1899, Fife Cottage became the temporary home of the mechanical engineering work until the spring of 1902. The Astronomical Observatory was built near the close of 1900. The Armory, the construction of which had been urged as early as 1888, was finished by 1902. Mechanical Hall, designed in 1899 and begun in 1900, was also completed in 1902. The Library was finished in 1902 and opened in 1903. The President's House was built in 1905. The Central Heating Plant was completed in the early part of 1908. The south wing of Woodburn Hall was completed in 1911.

DESCRIPTION OF THE INSTITUTION

LOCATION.

Morgantown, the seat of the University, is the county seat of Monongalia county. It is a beautiful town of twelve thousand inhabitants, located on the Monongahela river and the Baltimore and Ohio railroad, 103 miles east of Wheeling, and the same distance south of Pittsburg. It has modern conveniences of natural gas, water-works, electric lights, street railways, local and long distance telephones, and is noted for its healthful conditions, physical, social, and moral. There are churches of the following denominations in the town: Presbyterian, Methodist Episcopal, Methodist Protestant, Baptist, Protestant Episcopal, Lutheran, Christian, and Roman Catholic. There are no saloons.

Few institutions of learning have more attractive natural sites. The University grounds border the Monongahela river and afford a most picturesque outlook. The campus comprises about fifty acres. The University has also a farm of about one hundred acres for the use of the Agricultural Experiment Station and the College of Agriculture.

ORGANIZATION

The University organization embraces:—

The College of Arts and Sciences; including the Department of Military Science.
The College of Engineering and Mechanic Arts.
The College of Agriculture.
The College of Law.

The following schools are connected with the University in their management and work but do not confer degrees:—

The School of Music.
The School of Fine Arts.
The Summer School.
The School of Agriculture and Domestic Science.

The West Virginia Agricultural Experiment Station is under the control of the Board of Regents of the University.

FUNDS

The funds for maintaining the University are derived from the following sources: (1) Interest on the land grant endowment of $115,750; (2) the Morrill fund; (3) the Hatch fund; (4) the Adams

fund; (5) biennial appropriations by the state legislature; (6) fees and tuition.

BUILDINGS

The buildings are as follows:—

1. Woodburn Hall, a three-story building, containing the administrative offices, lecture-rooms and the physiological and zoological laboratories. A portion of the third floor of this building is occupied by the University School of Music.

2. Martin Hall, a three-story building, containing lecture-rooms and society halls.

3. Science Hall, a four-story building, containing lecture-rooms, laboratories for the departments of physics, chemistry, and geology, and the museum of geology and paleontology.

4. Commencement Hall, a large two-story building, containing a commodious chapel, with 1,500 seats, and the gymnasium.

5. The Agricultural Experiment Station, a two-story building, containing laboratories, lecture-rooms, and offices.

6. The Armory and Drill Hall, for the Department of Military Science.

7. Mechanical Hall, occupied by the College of Engineering and Mechanic Arts.

8. The Library, containing the general library, reading, and seminary rooms.

9. The President's House.

10. The Central Heating Plant.

11. The Men's Hall, or dormitory.

12. The Women's Hall, or dormitory, for women students.

13. The Fife Cottages, containing lecture-rooms and the anatomical and botanical laboratories.

Besides these there are the various buildings on the Agricultural Experiment Station Farm.

All of the buildings mentioned, except the Men's Hall, the Fife cottages, and the farm buildings, are of brick and stone.

THE UNIVERSITY LIBRARY

The library building is a three-story stone structure, fireproof, 135 by 70 feet. The reading and reference rooms, occupying nearly the entire first floor, are well lighted, provided with modern library appliances, and are convenient to the book room in the rear of the main building. The book room is supplied with metal stacks which hold 20,000 volumes. On the upper floors of the building are rooms for government documents and for class work.

The library contains about 32,500 volumes, including 5,500 govern-

ment documents. Present appropriations provide for an annual increase of about 1,500 volumes. Two hundred and twenty periodicals are received, including publications of societies and scientific journals. Most of the county papers of the state are sent to the reading room

A card catalogue, shelf list, and other bibliographic aids are provided and the librarians are ready at all times to give assistance in research and investigation.

There is a special library belonging to the College of Law, containing 5,000 volumes, located in Woodburn Hall; and the Willey Library, a valuable collection of about 1,500 volumes donated to the University by the heirs of the late Senator W. T. Willey, has been placed in the document room and opened to the public for reference use.

The library of the Agricultural Experiment Station, containing valuable sets of chemical journals and other technical material, in all about 5,000 volumes, may also be consulted by members of the University.

The various libraries connected with the University contain in the aggregate more than 42,500 volumes.

All officers and students and, under special restrictions, persons not connected with the University, have the privilege of drawing books from the library for home use, two volumes being allowed at one time. The corps of instruction have direct access to the shelves in the stack, and students may also have this privilege for special investigation upon recommendation of their instructors. The most important reference books, and books used in connection with the courses of instruction, numbering between 4,000 and 5,000, are kept on open shelves in the reference room.

The library is open from 8 a. m. to 10 p. m. every week day during the term, except Thanksgiving day, Christmas day, New Year's day, and the Fourth of July. On Sundays, the library is open, for readers from 2 to 5 p. m. During the Christmas and summer vacations, it is open on week days from 8 to 12 a. m.

LABORATORIES

The laboratories of the physical sciences are all grouped in Science Hall. The laboratories devoted to physics and elementary electrical engineering occupy the basement and first floor, the general chemical laboratories and lecture rooms the second floor, and the qualitative and quantitative laboratories a portion of the third floor. The geological lecture room, laboratory, and museum occupy the remainder of the third floor.

On the basement floor of Woodburn Hall are placed the laboratories of the department of domestic science and of the departments

of physiology and pathological anatomy. The zoological laboratory occupies the third floor of the south wing of the same building. The laboratories for work in botany and bacteriology and in anatomy are situated in the Fife cottages.

The experimental work in the departments of dairying and horticulture in the College of Agriculture is carried on for the present on the basement floor of Martin Hall. The Experiment Station contains a laboratory for work in plant pathology, two well equipped chemical laboratories and an entomological laboratory with its accompanying valuable collection of specimens. The greenhouses adjoining the Station are designed to afford facilities for experimental work.

The laboratories of the College of Engineering are all grouped in Mechanical Hall. They consist of the mechanical and steam laboratories connected with the power plant equipment, the electrical laboratory, the testing laboratory, the hydraulic laboratory, the wood-working shop, the machine shop, the sheet-metal and pipe-fitting shop, the forge shop, and the foundry. In addition to these there are two large, well lighted and well equipped drawing rooms, and a blue printing room.

MILITARY TRAINING.

Military training is prescribed for all regular students in the University below the rank of Junior unless such students are more than twenty-three years of age upon their entrance to the University. Certain exceptions to this requirement are stated in full on page 195 in connection with the detailed announcement of the department of military science.

PHYSICAL TRAINING

Gymnasium

For the physical training of students excellent opportunities are offered by the gymnasium. It is furnished with a complete anthropometric equipment, baths, dressing room, lockers, and all kinds of apparatus usually found in modern gymnasiums. In all the work the aim is to develop health, strength and vitality, and such special exercises are prescribed as may be necessary to symmetrical development.

Young women have the same advantages in the gymnasium as young men, certain hours being reserved and regular classes formed for them.

Athletics

The department of athletics, as now organized, is under the supervision of a director, who is assisted by a coach. Football, base-ball, basket-ball, track and tennis teams are organized and trained each season. Two field days are held annually, one in the fall and one in the spring. Indoor meets are held during the winter term for the class championship. The athletic field is provided with a grand-stand, which adds greatly to the enjoyment and profit of athletic sports. All field sports are under the control of the athletic board of control which is made up of the faculty committee on athletics and five representatives of the student body, chosen from the various classes of the University. The University is a member of the Intercollegiate Athletic Association of Western Pennsylvania and West Virginia and of the Intercollegiate Athletic Association of the United States.

UNIVERSITY FEES AND EXPENSES

In the College of Arts and Sciences and in the College of Agriculture tuition is free to West Virginia students. For students not residents of West Virginia the tuition fees are $20.00 per quarter, or $50.00 per year.

In the College of Engineering the tuition fees are $8.00 per quarter, or $20.00 per year, for resident students, and $20.00 per quarter, or $50.00 per year, for non-resident students.

In the College of Law the tuition fees are $10.00 per quarter, or $25.00 per year, for resident students, and $20.00 per quarter, or $50.00 per year, for non-resident students.

The matriculation fee is $5.00, payable upon entering the University by all students except cadets and those whose work is exclusively in music or art. This fee is paid but once by each student unless he remains out of the University more than three years.

The contingent fee is $2.00 per quarter, payable at the beginning of the quarter by all students except cadets.

The athletic fee is $2.00 per quarter for the fall and spring quarters and $1.00 for the winter quarter, payable at the beginning of each quarter by all students.

A fee of $2.00 each term is charged for registration and the issuance of class cards. This fee is remitted to all students who procure class cards during the first three days of the fall quarter, the first day of the winter quarter, and the first day of the spring quarter. It is exacted in all other cases. Class officers will issue class cards only on presentation of the ticket from the registrar and

the bursar. Students whose work is exclusively in music or art, or in both, are excused from payment of the $2.00 registration fee.

The diploma fee is $5.00, payable by all students at the beginning of the quarter in which they expect to receive their degree or diploma.

A fee of $1.00 is charged for furnishing a copy of a student's record in the registrar's office after the regular quarterly reports have been issued.

Students in laboratory courses pay special fees to cover the cost of materials used.

BOARD AND LODGING

Board and lodging together may be obtained in Morgantown for $3.25 per week. Most students, however, pay from $3.75 to $4.50 per week. Furnished rooms may be obtained in private families at from $1.00 to $1.25 per week. Board in students' clubs costs from $2.50 to $3.00 per week; in private families, from $3.00 to $4.00. The minimum rates here stated are those obtainable at the Men's Hall.

ESTIMATED EXPENSES FOR A YEAR OF NINE MONTHS

Room rent	$ 27.00 to	$ 45.00
Board	90.00 to	120.00
Washing	9.00 to	13.00
Text-books	8.00 to	30.00
Contingent and athletic fees	6.00 to	11.00
	$140.00	$219.00

To this estimate must be added matriculation, tuition, diploma, and laboratory fees, in the case of students who are required to pay them, traveling expenses, clothing, and miscellaneous expenses, which depend largely upon the tastes and habits of individual students.

Text-books are kept for sale in the University book store and are furnished to students at cost.

State cadets are furnished their text-books, stationery, and uniforms free and are exempt from the payment of matriculation, contingent, and tuition fees.

ACCREDITED AND RECOGNIZED PREPARATORY SCHOOLS

The University is a part of the public school system of the state and desires that its relations with the other parts of the system be as close and intimate as possible. The committee on classification

and grades has full charge of all matters pertaining to accredited and recognized schools. School superintendents, principals, or boards, desiring to have their schools placed on the accredited or recognized list, should make application to Professor J. N. Deahl, sub-committee on accredited and recognized schools.

Diplomas or certificates of a general nature will not be accepted, but certificates setting forth the work of the student in detail will be required in every case. The University provides a special form for this certificate, copies of which may be obtained at any time upon application to the President of the University or the chairman of the committee on classification and grades. A supply should be kept on hand by the principal of each accredited or recognized school.

ACCREDITED PREPARATORY SCHOOLS

Accredited schools are those which offer a sufficient amount of work to admit their students to the freshman class in the College of Arts and Sciences*. Eligibility to the list of accredited schools depends on the quantity and quality of the work done. The following provisions concerning the quality of the instruction must be complied with:

1. The scholastic attainments of teachers in accredited schools must be equivalent to that of a graduate of a standard college and should include professional preparation and some special training in the subjects they teach.

2. The number of daily periods of class room instruction given by any one teacher should not exceed five.

3. The faculty should consist of not fewer than three teachers exclusive of the superintendent of schools, except in cases where the number of students does not exceed thirty or forty.

4. Laboratory and library facilities must be adequate to meet the needs of instruction.

The list of accredited schools is as follows:

Alderson Academy.....Alderson, W. Va.
Allegheny County Academy.....Cumberland, Md.
Allegheny Collegiate Institute.....Alderson, W. Va.
Bluefield High School.....Bluefield, W. Va.
Broaddus Classical and Scientific Institute.....Philippi, W. Va.
Charleston High School.....Charleston, W. Va.
Clarksburg High School.....Clarksburg, W. Va.
Clay District High School.....Shinnston, W. Va.

*As the requirements for admission to the College of Engineering are all prescribed, it is possible that a graduate of an accredited school may not have some of the prescribed work, and so not be able to enter the freshman class in that college.

Connellsville High School.....Connellsville, Pa.
Elkins High School.....Elkins, W. Va.
Fairmont High School.....Fairmont, W. Va.
Grafton High School.....Grafton, W. Va.
Hinton High School.....Hinton, W. Va.
Huntington High School.....Huntington, W. Va.
Keyser High School.....Keyser, W. Va.
Linsly Institute.....Wheeling, W. Va.
Mannington High School.....Mannington, W. Va.
Martinsburg High School.....Martinsburg, W. Va.
Morgantown High School.....Morgantown, W. Va.
Morris Harvey College.....Barboursville, W. Va.
Moundsville High School.....Moundsville, W. Va.
Parkersburg High School.....Parkersburg, W. Va.
Pittsburg Central High School.....Pittsburg, Pa.
Ronceverte High School.....Ronceverte, W. Va.
Salem College.....Salem, W. Va.
Scottdale High School.....Scottdale, Pa.
Sistersville High School.....Sistersville, W. Va.
State Normal School.....Athens, W. Va.
State Normal School.....Fairmont, W. Va.
State Normal School.....Glenville, W. Va.
State Normal School.....Huntington, W. Va.
State Normal School.....Shepherdstown, W. Va.
State Normal School.....West Liberty, W. Va.
Southwestern State Normal School.....California, Pa.
Tyler County High School.....Middlebourne, W. Va.
Uniontown High School.....Uniontown, Pa.
Wheeling High School.....Wheeling, W. Va.

RECOGNIZED PREPARATORY SCHOOLS

Recognized preparatory schools are those whose graduates have not had a sufficient number of credits to admit them to the freshman class, but receive credit toward admission for the work certified.

Belington High School.....Belington, W. Va.
Bramwell High School.....Bramwell, W. Va.
Buckhannon High School.....Buckhannon, W. Va
Cameron High School.....Cameron, W. Va.
Charles Town High School.....Charles Town, W. Va
Ceredo High School.....Ceredo, W. Va.
Chester High School.....Chester, W. Va.
Claysville High School.....Claysville, Pa.
Davis High School.....Davis, W. Va.
Fayetteville District High School.....Oak Hill, W. Va.

Harrisville High School.....Harrisville, W. Va.
Kingwood High School.....Kingwood, W. Va.
McMechen High School.....McMechen, W. Va.
Mt. Wesley High School.....Berkeley Springs, W. Va.
New Cumberland High School.....New Cumberland, W. Va.
Pennsboro High School.....Pennsboro, W. Va.
Perryopolis High School.....Perryopolis, Pa.
Piedmont High School.....Piedmont, W. Va.
Point Pleasant High School.....Point Pleasant, W. Va.
Ravenswood High School.....Ravenswood, W. Va.
Salem High School.....Salem, W. Va.
St. Marys High School.....St. Marys, W. Va.
Sutton High School.....Sutton, W. Va.
Terra Alta High School.....Terra Alta, W. Va.
Weston High School.....Weston, W. Va.
Williams District High School.....Williamstown, W. Va.

ADMISSION TO THE UNIVERSITY

METHODS OF ADMISSION

Students are admitted to the University either by examination or on certificate from an accredited preparatory school. In the latter case the certificate must set forth the work of the student in detail and diplomas or certificates of a general nature will not be accepted.

Candidates for admission to the University must present certificates of good moral character and, if from other colleges or universities, must present letters of honorable dismissal.

Candidates for admission who come from other institutions of learning without letters of honorable dismissal may, at the discretion of the registrar, be allowed to matriculate provisionally. In every such case, the registrar will himself make immediate inquiry of the institution from which the applicant comes concerning his standing as a student in that institution. If a certificate of honorable dismissal cannot be obtained, the matriculation will be cancelled and all fees paid by the applicant will be returned.

The course of procedure above described will be followed also in cases of students from accredited schools, who offer themselves for matriculation without the regular certificate as prescribed above.

ENTRANCE CREDITS

The requirements for admission to the various colleges of the University are stated in terms of units.

A unit in any subject represents the amount of work that may be done in a standard high school in a year of thirty-six weeks, with five recitation periods of forty-five minutes each, per week. In courses where laboratory work is required, from two to three hours of laboratory work is considered the equivalent of one hour recitation according to the amount of outside preparation required in connection with such work.

Certificates of entrance credits must be on the blank form prescribed by the committee on classification and grades, or on a similar form, so that credit values, in units, may be readily computed.

The chairman of the committee, or any member acting in his stead, may list and certify the credits of any applicant for admission to the University when such credits are from an accredited school and in proper form, and are of sufficient value in units to entitle the applicant to classification as a freshman, or first year classman. Certificates from schools not on the accredited list must be approved by the committee.

MATRICULATION AND REGISTRATION

In order to gain admission to the University, the student must first report at the Registrar's office in Woodburn Hall. A blank will be furnished, which, on being signed, will be presented to the Registrar. That officer will then assign the student to a class officer, and will certify to the treasurer the fees, if any, which are to be paid. On the payment of these fees, the student will be assigned to the proper classes by his class officer. No student is permitted to become a member of any class until his registration is completed.

All students are required to register at the beginning of each term.

SPECIAL STUDENTS

Persons who are not able to satisfy all entrance requirements, or who do not desire to become candidates for a degree, may be admitted as special students, subject to the following provisions:

1. Special students must as a rule be twenty years of age or over. Only in exceptional cases will permission be given to applicants under that age.

2. Special students must satisfy at least nine units of the requirements for admission, including two units of English.

3. Every application for admission as a special student must be

in writing, and must set forth fully the applicant's reasons, together with a detailed statement of the studies he desires to pursue.

4. Special students are subjected in all respects to the usual rules relating to registration and scholarship. They may be assigned to classes for which they apply, it being understood, however, that admission to any class rests entirely with the instructor in charge, and further, that admission to any class when so granted does not necessarily imply credit for prerequisites.

5. Special students shall not have their work certified for credit to any other institution, but a general statement of work done may be given if applied for; in every case, this statement shall show that the work was done under registration as a special student, and in case the full requirements for admission to the University have not been satisfied, the statement shall set forth that fact.

ADVANCED STANDING

1. All applications for advanced standing in college work must be made to the committee on classification and grades not later than two weeks after the applicant's registration. When certificates of work done elsewhere are offered, the committee will consider them, and, if they are adjudged sufficient, the credits they call for will be certified to the registrar by the chairman of the committee. If no certificates are offered, or those offered are not considered sufficient for the credits asked, the applicant will be sent by the committee to the heads of the departments in which credit is sought, who will report, after examination, to the committee, on the form furnished, the numbers, names, and values of the courses, if any, for which the applicant is entitled to credit. The applicant shall, at the discretion of the committee, have the privilege of presenting his certificates to the heads of the departments, who may give them such recognition in connection with the examination as they see proper. When the credit to be given, if any, has been determined, it shall be reported by the head of the department to the chairman of the committee, on the form provided, always under seal, and in no case must information of such credit be given to the applicant before the report has been sent to the committee. Before credits in this way are certified to the registrar, all certificates must be returned to the chairman of the committee, and by him placed on file.

SCOPE OF THE ENTRANCE REQUIREMENTS

The following description indicates the extent of preparation expected in each of the several subjects offered for entrance credit for admission to the various colleges of the University.

ENGLISH

Grammar and Elementary English.—No student will receive entrance credit in English whose work shows marked deficiency in spelling, punctuation, grammar, sentence structure, or paragraphing. The student should be prepared to state intelligibly the essential principles of English grammar and to explain the syntactical structure of any sentence encountered in his reading. An elementary textbook on grammar should have been completed before the student enters upon his high school course. For more advanced study of the subject and for practical review the material presented in the ordinary high school text-books on rhetoric may be utilized. The subject should be constantly reviewed in connection with the work in composition during the four years of the high school course.

Rhetoric and Composition.—Systematic practice in theme writing and other forms of oral and written composition with instruction in the principles of rhetoric and the forms of discourse must form an important part of each unit of English. Students who are not able to express themselves in clear, correct, and idiomatic English will not be given full credit. The subjects upon which the student writes should not be drawn exclusively from literature. A considerable portion of them should be so distributed as to give proper training in the various forms of discourse.

The three units in English should include the following:

(a) One unit. English Classics and English Composition. The thorough study of at least five English classics selected from the list below. The simplest narrative classics, both prose and poetry, should be selected. The aim of the work should be to stimulate interest in good literature and to enable the student to form vivid mental pictures and to understand fully the thought expressed. The aim of the composition work should be to secure facility and accuracy. The work should include letter writing, short themes in narration and description, and study of paragraphing, and sentence structure.*

*Reading of good literature outside of class and memorizing of notable passages in prose and verse should be required, but outside reading accompanied by written reports or reviews made according to a sterotyped model in place of a thorough study of assigned lessons, class instruction and discussion will not be considered as satisfactorily fulfilling the requirement of any unit.

(b) One unit. English Classics and English Composition. Thorough study of five other English Classics. The work should include more complex forms of fiction and narrative poetry, simpler essays, and at least one of Shakespeare's plays. The aim should be to make a study of the form structure, style, and purpose of the selection; the author's life; relation of the selection to its age and to other works of similar type. The work in composition should include themes of moderate length in all the forms of discourse; study of unity, coherence, and emphasis in sentences and paragraphs; kinds of sentences; diction; figures of speech.

(c) One unit. Advanced study of Classics; Rhetoric. A thorough and intensive study of the form, structure, and style, of at least one typical example of the novel, the drama, the lyric or epic poem, and the essay. A study of the principles of rhetoric, employing some good advanced high school textbook, with frequent and systematic theme writing must form a part of this unit.

The following list of classics is suggested for ready and study:

For the first unit: Longfellow's Evangeline and Courtship of Miles Standish; Whittier's Snow Bound; Lowell's Vision of Sir Launfal; Coleridge's Rime of the Ancient Mariner; Macaulay's Lays of Ancient Rome; Goldsmith's Deserted Village; Irving's Sketch Book; Hawthorne's Twice Told Tales; Franklin's Autobiography; Aldrich's Story of a Bad Boy; Warner's Being a Boy, A Hunting of the Deer, etc.; Burrough's Sharp Eyes, Birds and Bees, etc.; Dickens' Christmas Carol; Stevenson's Treasure Island.

For the second unit: Scott's Lady of the Lake, Marmion, Ivanhoe, Quentin Durward; George Eliot's Silas Marner; Goldsmith's Vicar of Wakefield; Mrs. Gaskell's Cranford; Cooper's Last of the Mohicans; Blackmore's Lorna Doone; Dickens' Tale of Two Cities, David Copperfield; Arnold's Sohrab and Rustum; Byron's Mazeppa and the Prisoner of Chillon; Shakespeare's Merchant of Venice, As You Like It, Julius Caesar, Twelfth Night; Addison's De Coverly Papers; Thoreau's Succession of Forest Trees; Stevenson's Inland Voyage.

For the third unit: Novels: Thackeray's Henry Esmond; George Eliot's Silas Marner or Romola; Jane Austen's Pride and Prejudice; Hawthorne's House of Seven Gables. Dramas: Shakespeare's Macbeth, Lear, or Henry V. Poems: Tennyson's Idylls of the King; Milton's Shorter Poems; Browning's Selected Poems; Palgrave's Golden Treasury. Essays: Lamb's Essays of Elia; Emerson's Essays; Ruskin's Sesame and Lilies; Carlyle's Heroes and Hero Worship, Essay on Burns; Macaulay's Essay on Addison and Life of Johnson; Washington's Farewell Address; Webster's Bunker Hill Oration; Lincoln's Gettysburg Speech, etc.

LATIN

(a) One unit—Such knowledge of inflection and syntax as is given in any good preparatory Latin book, together with the ability to read easy selections from Caesar.

(b) One unit—Four books of Caesar's Gallic War, or its equivalent in Latin of equal difficulty. The ability to write simple Latin based on the text.

(c) One unit—Six orations of Cicero. The ability to write simple

Latin based on the text. The simpler historical references and the fundamental facts of Latin syntax.

(d) One unit—Six books of Virgil, with history and mythology. Scansion of hexameter verse. Two of the three prescribed units to be offered must be (a) and (b). Either (c) or (d) may be offered for the third unit, but one year of composition must be included.

GREEK

(a) One unit—Introductory lessons, elements of grammar; easy translations from the Anabasis; translations into Greek of easy continuous prose based upon the Anabasis.

(b) One unit—Xenophon—the first four books of the Anabasis.

(c) One unit—Homer—The first three books of the Iliad (omitting II-494 to end) and the Homeric constructions, forms, and prosody; constant practice in sight translation and prose composition.

GERMAN

(a) One unit—A thorough knowledge of elementary syntax; constant drill in pronunciation, oral translation, and composition; translation of seventy-five to one hundred pages; advanced syntax; composition throughout the year.

(b) One unit—Modern prose and familiar poems, two hundred pages; advanced syntax; intermediate composition throughout the year.

(c) One unit—Advanced prose, four hundred pages; advanced composition throughout the year.

FRENCH

(a) One unit—(1) The essential principles of French etymology and syntax, and, especially, a thorough knowledge of the pronoun and of the regular and irregular verb; (2) ability to write in French, sentences of moderate difficulty; (3) the reading of from one hundred and fifty to two hundred pages of modern French prose; (4) ability to pronounce the language correctly and with some fluency.

(b) One unit—(1) Continued systematic study of French Grammar, including syntax; (2) the reading of from three to four hundred pages of modern French; (3) the practice in writing from dictation.

(c) One unit—(1) Twenty pages of advanced prose composition; (2) the reading of from four to six hundred pages of French, including three plays of Corneille and three of Racine.

HISTORY

From one to three units may be offered, selected from the following:

(a) Ancient History to 800 A. D.—one unit.

(b) Mediaeval and Modern European History—one-half to one unit. The amount of credit will depend upon the time given to the subject.

(c) English History—one-half to one unit. The amount of credit will depend upon the time given.

(d) American History, or American History and Civics—one unit.

The student should be familiar with the important events of the period of history which he offers for credit, and should have a clear knowledge of the general development.

A whole year that covers the whole field of general history with a good text-book and with notes on collateral reading and preparation of maps will be accepted as one unit, although it is believed that better results will be obtained by spending a whole year on ancient history and another year on the mediaeval and modern period.

American history and civics should be preceded by English history, and should not be given before the third year in the high school course, in case three years are given to history. Ancient history should be followed by English history in case mediaeval and modern history are not given.

The study of civics must not precede the study of American history; and, if studied as a separate branch following the course in American history, some advanced text such as Forman's Advanced Civics should be used. An outline knowledge of elementary civics, such as is presented in Forman's First Lessons in Civics, or in Peterman's Civics, is presupposed.

MATHEMATICS

(a) Algebra through quadratics—one unit. The four fundamental operations for rational algebraic expression; factoring, highest common factor, lowest common multiple, complex fractions, solution of equations of the first degree, radicals including the extraction of the square root of polynominals and numbers, fractional and negative exponents, quadratic equations, and equations containing one or more quadratic equations, and problems involving the use of such equations.

(b) Plane geometry—one unit. The completion of any standard text with original exercises and problems.

(c) Algebra—one-half unit. Review of essentials followed by ratio and proportion, the binominal therorem for positive and integral exponents, arithmetical and geometrical progressions.

(d) Solid geometry—one-half unit. Properties of straight lines and planes, dihedral and polyhedral angles, projections, polyhedrons, including prisms, pyramids, and the regular solids, cylinders, cones, and spheres, spherical triangles, measurements of surfaces and solids.

(e) Plane trigonometry—one-half unit. Definitions and relations of the six trigonometrical functions as ratios, proofs of important formulae, theory of logarithms and use of tables, solution of right and oblique plane triangles.

SCIENCE

(a) Physics—one unit. Credit will be given for one year's work with any standard text book, upon the presentation of a satisfactory note book, covering at least thirty-two experiments. The note book should contain the student's own record of his laboratory experiments and a signed statement from his teacher that the book is the original record of the student's observations. Students deficient in laboratory work may make up this deficiency in the University.

(b) Chemistry—one unit. Credit will be allowed for the completion in a satisfactory manner of any standard elementary text in inorganic chemistry, accompanied by individual laboratory work. A full year should be given to the work.

(c) Botany—one unit.

(d) Zoology—one unit.

Work in either botany or zoology, to be credited, must have been accompanied by individual laboratory work. The exact extent of the work which should be done cannot be stated here, but, for the maximum credit, it should be as much as a competent teacher, trained in laboratory methods, can accomplish in from one, to one and one-half years. In estimating the time employed, two hours of laboratory work will be counted as the equivalent of one recitation period. It will be necessary for aplicants to present their laboratory notes and drawings.

In botany the class should cover the ground of Coulter's "A Text-Book in Botany," or Bergen's "Foundation of Botany," or their equivalent.

In zoology the class work should cover about what is represented in Kellogg's "Elementary Zoology" (Henry Holt), or in Parker and Haskell's Zoology, one-volume edition (Macmillan & Co.). The amount of laboratory work that should be done is somewhat less than is outlined in Scheffer's manual (Blakiston).

(e) Physical Geography—one-half unit.

(f) Physiology—one-half unit.

Credit for one-half unit each in physical geography and physiology will be allowed—as elective only—if taught in a scientific

manner in an accredited or recognized secondary school. The use of a standard text should be supplemented by proper illustrative methods and proper observation. One-half year must be given to each subject.

DRAWING

One unit. To receive entrance credit in free hand drawing, instruction should have been designed to give the student an intelligent and accurate conception of form, light, and shade, and the ability to express simply and directly, such objects as natural and geometrical form, still life, architectural details, and casts from nature, the antique, and life.

The training of the eye to observe with understanding, rather than the teaching of any particular method of expression, should be the aim of the instructor. No mechanical aids should be employed. The pencil is recommended as the simplest and most convenient medium for elementary work. It is desirable that students seeking credit for drawing shall submit their work in addition to their general certificate.

AGRICULTURE

One-half to one unit—A study of soils, plants, grasses, cereals, insects, farm animals, feeding, gardening, etc. The experimental and demonstration work should be equivalent to one full year of laboratory work. Standard texts for class work and for laboratory guides should be used.

RULES GOVERNING CLASSIFICATION AND SCHOLARSHIP

THE CLASS OFFICER

The duties of the class officer are as follows:

1. To assign the student to proper courses, and see that prescribed work is taken in order.

2. To supervise the selection of elective courses by the student.

3. To keep a record of the work done by the student and to recommend him for his degree or diploma when the work is completed.

4. To have general oversight of the student's college life. The student will look to his class officer for advice and guidance in all matters pertaining to his work. Withdrawal from classes, changing from one class to another, etc., will always require the class officer's consent.

CREDITS

1. A credit represents the amount of work done in one quarter (twelve weeks), in five recitation hours and ten preparation hours a week. From two to three hours of laboratory work is considered equivalent to an hour of recitation, according to the amount of outside work assigned in connection with the laboratory hours.

2. The maximum number of credits which any student may secure in any one year (three consecutive quarters) is eleven.

3. The minimum number of credits for which a student may register in any quarter is three.

4. No course for which a credit has already been given shall be counted toward the minimum number of credits prescribed, unless by special permission of the committee on classification and grades.

5. The committee will consider the question of granting permission to any student to take more than the prescribed amount of work only on the presentation of a petition approved and signed by the class officer, and accompanied by a statement of the student's record for the preceding quarter. Such petition must be presented within seven days after the day set in the catalogue for the opening of the quarter.

6. Fractional credits in the College of Arts and Sciences will not be counted until they amount to at least one full credit.

7. Fewer than three credits in an ancient or a modern language will not be counted toward any University degree, diploma, or certificate until a third credit in the same language has been secured.

CLASSIFICATION

1. No student shall be classified as a freshman or first year student who is conditioned in more than one unit of entrance requirements.

2. No student shall be classified as a sophomore or second year student until all preparatory conditions are removed, and nine credits of prescribed freshman work, or nine credits including the prescribed work, are obtained.

3. No student shall be classified as a junior or third year student until he has received at least nineteen credits.

4. No student shall be classified as a senior or four year student until he has received at least thirty credits.

5. Classification of students for publication in the catalogue shall be made on the basis of the work to their credit at the close of the fall quarter each year, except in the case of students entering later in the year.

SCHOLARSHIP

1. Students are graded on a scale in which one hundred per cent is regarded as perfect and seventy per cent as a passing grade.

2. If the final grade of any student for any course is below sixty, it shall be recorded as a "failure," and the student must take the course again if he desires credit for it. If the final grade is sixty, or over, but below seventy, it shall be recorded as a condition," and the student shall have the privilege of a second examination, which must be taken at the time designated by the instructor, and applied for not later than ten days after the opening of the succeeding quarter. A condition not removed within the term following the one in which it was imposed becomes a failure. If the final grade after a second examination is again below seventy, it shall be recorded as a "failure."

3. If a student fails to register promptly at the beginning of any quarter, a deduction of two per cent from the final grade in every subject shall be made for each exercise missed, for all absences not more than seven in number, unless such absences are excused by the committee. If the absences are more than seven in number, full credit for the course will not be given, unless such absences are excused by the committee and the work missed made up to the satisfaction of the instructor.

4. Punctuality in attendance and attention to the work of the classroom will be given much consideration in determining the class standing of the student. Every unexcused absence will effect a reduction of two per cent in the student's class standing in the course.

5. The permission of both class officer and instructor shall in all cases be necessary for the withdrawal of a student from any class, and after six weeks of any quarter have elapsed, the permission of the committee on classification and grades must also be obtained.

If a student discontinues a course without permission as above, the standing shall be reported to the registrar as zero. If the student attends the course throughout the quarter and is absent from examination, without permission, the instructor shall count the examination as zero, and report the final grade as one-half the recitation grade. If the student is unavoidably absent from examination, and has a recitation grade of eighty-five or over, the instructor may report the recitation grade as the final grade in the subject. If the recitation grade is under eighty-five, and the absence from examination is for reasons satisfactory to the instructor, the fact will be recorded on the card returned to the class officer, and the student shall have the privilege of taking the examination at a later time.

In every case, except as above, the class card must bear a final grade, and the class officer's report to the registrar must show a final grade.

All instructors are required to report at the end of each term grades in all courses taken with them, and not hold them over to a later term or report them as incomplete.

6. Any student who fails to make a standing of sixty per cent in each of two or more subjects, or who fails to make the average standing of sixty per cent in all of his courses for any quarter, shall be suspended from the University for the succeeding quarter. If, however, the failure as above is due to the abandonment of any class, or withdrawal from the University without permission, or to absence from examination without reasonable excuse, the suspension shall be indefinite. If a student suspended for any quarter by the operation of this rule re-enters the University and again becomes subject to it, his suspension shall be indefinite.

The committee on classification and grades will relieve any student from the operation of this rule for satisfactory reasons. The student asking for relief must, when possible, appear before the committee in person; a statement from the student's class officer and instructors concerned will also be required.

7. In case of the withdrawal of a student from the University, the class officer shall report the fact in writing to the committee on classification and grades, together with a full statement of the reasons for such withdrawal and circumstances attendant thereon. If in the judgment of the committee the reasons given for withdrawal are insufficient, the student will be dealt with as subject to the sixty per cent rule. (See rule 5 above.)

8. A report of each student's work is made at the close of every quarter, either to the student himself or to his parent or guardian. A complete record is also kept in the registrar's office. The fee for making a copy of this record after the quarterly reports have been sent out is one dollar.

THESIS

If a thesis is required by the class officer of a candidate for the bachelor's degree, the student will observe the following regulations:

Theses must be typewritten with black non-copying record ink, on Crane's Japanese linen paper, of quality 24 pounds to the ream, folio size. This paper, of right quality and correct size, viz., 8x10 inches, may be obtained at the University book room, or at any book store in Morgantown. There must be a margin of one and one-fourth inches at the left edge of each sheet, and a margin of three-fourths of an inch on the other edges. The title page should follow,

mutatis mutandis, the sample title page on the bulletin board in the Library.

When the thesis is typewritten and ready for binding, the student will secure the written approval of the professor, under whose direction the thesis has been prepared, and the librarian's receipt for the thesis fee. The thesis will then be presented to the committee on classification and grades. The thesis must be in the hands of this committee at least thirty days before the date on which the degree is to be conferred.

The committee on classification and grades will not receive a thesis from any student until he has received credit for thirty-four college courses.

GENERAL INFORMATION

DISCIPLINE

The rules and regulations which students are required to observe are few, simple, and reasonable:—civil and orderly conduct; punctuality and regularity in attendance upon all required exercises; reasonable diligence in the performance of the work prescribed, and abstinence from drinking, gambling and like gross vices.

Students who do not comply with these requirements will not be allowed to remain in the University.

All matters of discipline are in charge of the University Council.

CHAPEL EXERCISES

The regular University chapel exercises consist of singing, reading the Scriptures, and prayer. The service is conducted by the chaplain of the University, or by some one designated by him. The singing is in charge of the director of the School of Music. Attendance upon chapel exercises is voluntary; but patrons of the University who wish the students under their charge to attend these exercises may have them enrolled by making such desire known to the University chaplain.

CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association of West Virginia University is organized for the purpose of encouraging active Christian work among its members, and of promoting the spiritual growth of all the young men of the University. Regular meetings are held every Friday evening at 6:45 o'clock in the Association Room, No.

14, Martin Hall. All young men of the University are eligible to membership in the Association. There are two classes of members, active and associate.

The administrative policy of the Association is directed by an advisory board composed of members of the faculty, business men of the town, alumni and students. A general secretary is employed, who gives his full time to the work. The Y. M. C. A. office is in room 1, Martin Hall. Mr. E. J. Simonds is the present secretary.

Membership in the Young Women's Christian Association is open to all young women of the University. Regular devotional meetings are held every Friday at 6:30 p. m. in the Women's Parlor in Woodburn Hall.

Systematic courses in Bible Study are offered both for men and for women which cover the four years of college life. The classes are small in size, informal in character and afford opportunity for every one to strengthen his own religious convictions. Special courses are also offered in the study of Christian missions. Delegates are sent each year from each association to the State and International student conventions.

OTHER SOCIETIES

1. The Columbian Literary Society. Regular meetings every Friday night in its own hall in Martin Hall. Membership open to all students of the University.

2. The Parthenon Literary Society. Regular meetings every Friday night in its own hall in Martin Hall. Membership open to all students of the University.

3. The University Dramatic Club. The purpose of this organization is to stimulate an interest in literary and dramatic work in the University. This it accomplishes through the practical and systematic study of standard plays, and through the public presentation of at least two plays in each college year. All University students are eligible to membership in the Dramatic Club, but those desiring to enter must pass a series of tests under the direction of the professor of elocution and oratory.

4. The Choral Society. Regular meetings every Monday at 7:30 p. m. in Commencement Hall. Membership open to all students in the School of Music and all others interested.

5. The Athletic Association. Organized for the purpose of encouraging and developing the athletic interests of the University. Incorporated under the laws of West Virginia. Membership open to all students of the University.

6. The Students' Publishing Association. Organized for the purpose of publishing the college papers. At present there are published

the Athenaeum, a weekly newspaper, and the Monongalian, a quarterly literary magazine.

7. The Engineering Society. Regular meetings the first and third Friday nights of each month in its room in Enginering Hall. Membership open to all students in the College of Engineering and Mechanic Arts.

8. The University Grange, Number 373, Patrons of Husbandry. Regular meetings every Tuesday night. Membership open to all students in the College of Agriculture and to others who may be elected.

9. The English Club. Regular meetings on the first Thursday night of every month.

10. The Beowulf Gedriht. Regular meetings in October, November, February, April and May. Open to all members of the University upon the fulfillment of certain scholarship qualifications.

11. The Woman's League. An organization of all the woman students of the University for the purpose of maintaining the general welfare and special interests of such students. The league is controlled by a governing board containing both faculty and student members. Social meetings are held once each quarter.

The fraternities of the University hold their meetings Tuesday night of each week at 6:30 o'clock.

PRIZES

All contestants in any of the contests in oratory, declamation, or debate, must have received credit for at least one course in elocution.

No composition, in whole or in part, shall be submitted in competition for two prizes.

Only undergraduate students are eligible for any prize offered.

No student shall be eligible to enter any contest who has not been a resident student in this University for at least one quarter preceding the quarter in which the contest is to be held, and who is not a resident student in good standing in the University in the quarter in which the contest is held.

No successful contestant may become for a second time a competitor for the same prize.

If in any contest there are fewer than two competitors, no prize will be given in that contest.

Students intending to compete in any essay-writing contest must notify the chairman of the committee on ways and means not later than March 15. Three typewritten copies of each essay must be in the hands of the chairman of the committee not later than May 15.

The conditions upon which the awards in the several contests

are made may be learned upon application at the President's Office, or to the members of the committee on ways and means.

The following prizes are open to students in various departments of the University:

I. The Inter-Society Prizes

Prizes aggregating one hundred and fifteen dollars are awarded annually by the board of regents of the University to the literary society whose representatives excel in declamation, original oratory, essay-writing, and debate.

II. The Regents' Prize in Composition

A prize of fifty dollars is awarded annually by the board of regents of the University to the student in any one of the regular college courses who shall write the best essay on a topic selected by the committee on ways and means. The subject for 1911-12 is "The Panama Question. The Influence of the Panama Canal upon World Progress."

III. The James F. Thompson Prize in Anatomy

A prize of twenty-five dollars, the gift of Mr. James F. Thompson, of Martinsburg, W. Va., will be awarded annually to the undergraduate student who does the best work in anatomy for three quarters.

IV. The Edward Thompson Company Prize

The Edward Thompson Company offers for the year 1910-11 to the student in the senior law class who shall write the best essay on some subject in law, to be selected by the faculty of the College of Law, a prize, consisting of a set of the Encyclopedia of Pleading and Practice, in twenty-three volumes. The value of this work is $138.00.

V. The Bryan Prize in Political Science

The Hon. William J. Bryan has given a sum of money, the annual income of which is to be offered as a prize to the student in the University who shall write the best essay on some subject in the science of government. The amount of the prize for the present is fifteen dollars. The subject for 1911-12 is "Initiative, referendum, and recall." The subject is intended to include discussion of the merits of this method of government.

VI. The Tax Commission Prize

The members of the State Tax Commission of 1902, W. P. Hubbard, Henry G. Davis, John K. Thompson, L. J. Williams, and J. H. Holt, have donated the sum of $1,350, the income of which is to be used as a prize for the "best original work bearing on matters of taxation in West Virginia." The conditions of competition are determined by the University Council. The amount of the prize at present is $70.00. For the year 1911-12 this prize will be given for the best essay on the subject "Should natural gas, on leaving the state, be protected by direct tax?"

VIII. The Russell Love Morris Prize in Civil and Mining Engineering

Russell Love Morris, C.E., Professor of Civil Engineering, offers a prize of fifty dollars annually to the student in the department of civil and mining engineering who presents the best thesis on some subject of special application to the needs and resources of West Virginia.

HIGH SCHOOL DAY

In order to promote scholarship, literary proficiency, and pure athletics among the public high schools of West Virginia, and in order to strengthen the friendly relations that already exist between West Virginia University and such high schools, the University has established an annual High School Day.

The date of the second of these annual High School Days will be Thursday and Friday, May 16 and 17, 1912.

Members of the various public high schools of West Virginia are invited to meet at Morgantown at that time to participate in various contests for scholarship, prizes and medals, according to the following regulations:

1. All public high schools in West Virginia on the University's list of either accredited or recognized high schools are eligible to compete.

2. Only third-year and fourth-year boys and girls in such schools are eligible.

3. Girls as well as boys are eligible to all the contests, except those in athletics.

4. The maximum number of competitors from any one school is four, and no student may compete in more than two of the following divisions:

(1) **Scholarships.**—Six scholarships will be awarded, good for a period of four years in any college, department or school of the University (the College of Arts and Sciences, the College of the College of Law, the School of Music, the School of Fine Arts).

These scholarships will be awarded as the result of examinations to be held in Morgantown May 16 and 17, 1912, in Latin, History, English, Algebra, Geometry, Physics, French, and German. The class standing of the applicants will also be taken into consideration. Applicants will be examined in two subjects only, and they may choose in what two they will be examined from the above list. The examinations will be set at Morgantown by University instructors in the various departments represented.

(2) **Prizes.**—Cash prizes will be awarded as follows: (a) For original oration—first prize, $40.00; second prize, $25.00. (b) For essay--first prize, $35.00; second prize, $25.00. (c) For debate—first prize, $40.00; second prize, $25.00. (d) For declamation—first prize, $25.00; second prize, $15.00.

(3) **Medals.**—Five medals will be offered for excellence on the athletic field, in track events, (running), field events, (vaulting, jumping, hammer-throwing, etc.), and relay race.

No candidate will be allowed to enter more than two of these three classes.

Principals of the high schools will report to the President of the University not later than February 1, 1912, the names of candidates for the various contests, stating in detail the subject or subjects in which they expect to compete.

Circulars giving full information concerning High School Day and concerning the rules governing the contests may be obtained by application to the President's office.

THE MEN'S HALL

The Men's Boarding Hall, recently established by the Board of Regents, is situated at 52 University Driveway. There are rooms for the accommodation of from twenty to twenty-five young men and dining-room accommodations for fifty. The rates are seventy-five cents a week for rooms and $2.50 a week for board. The hall is in charge of Mrs. F. M. Harris as matron.

THE WOMEN'S HALL

The Women's Hall is centrally located at the corner of Willey and Spruce streets, and will accommodate between forty and fifty young women. Miss Susan Maxwell Moore, Dean of Women, is in charge of the Hall. Anyone desiring information as to prices, or available rooms in the Hall, should apply to Miss Moore.

BOARDING AND ROOMING PLACES

The matter of furnishing information to new students regarding suitable boarding and rooming places is in charge of the Y. M. C. A. and Y. W. C. A. of the University. On their arival in Morgantown new students should come directly to Woodburn Hall where they will find complete lists of rooms and boarding places and also upper classmen who will help them in getting located and matriculated. During the opening days of the quarter committees from the two Christian Associations meet new students at trains and are ready to render them every assistance possible.

Young men desiring information in advance of their arrival in Morgantown may address E. J. Simonds, Secretary of the Y. M. C. A., Morgantown, W. Va. During July and August information may be secured by writing to Frank B. Lewellyn, 570 Spruce street, Morgantown, W. Va. Young women may address Miss Pearl Hodges, 552 Spruce street, Morgantown, W. Va.

AID FOR STUDENTS

The Employment Bureau, organized by the University Y. M. C. A., undertakes to assist earnest and worthy students who are dependent upon their own efforts for the expenses of their education, to obtain various forms of employment in Morgantown. Prospective students desiring such aid should correspond with E. J. Simonds, Secretary of the Y. M. C. A., before entering the University, stating the kind of work desired and the nature of past experience in any occupation. The work consists largely in waiting table, caring for rooms and lawns, clerking in stores, stenographic services, etc.

There is also a faculty committee on aid for students which cooperates with the employment bureau in securing work for students.

The Woman's League of the University has also established an exchange through the medium of which the women of Morgantown may obtain the services of young women students for such work as cooking, sewing and mending, or other light housework, caring for children, tutoring, assisting at social functions, or secretarial work of various kinds. Students who desire to do work of this kind should inform Miss Margaret Hopwood, Beverly avenue, Morgantown. The rate of remuneration is fixed by the Woman's League board and depends upon the time spent and the kind of work done.

TEACHERS' BUREAU OF INFORMATION

The Teachers' Bureau of Information, under the direction of the department of education, has for its aim:—

1. To keep a record of the students or alumni of the University

who wish to teach, to gather information as to their academic and professional qualifications and personal fitness for school work, and to recommend for vacancies those who seem most likely to prove themselves efficient.

2. To keep a similar record of alumni who wish to be transferred to other positions.

3. To assist boards of educations and other school officials in securing teachers, and to co-operate with teachers' agencies in placing graduates of the University.

Students desiring recommendation for position as teachers should do at least one year's work, or three courses, in education. Those desiring recommendation for a position in a normal school or as principal or superintendent of schools, should do at least two years' work, or six courses, in education.

No student is assured a position. General letters of recommendation are not given to students. Information obtained from professors and others is regarded as confidential. No charge is made for any services rendered. Blanks for registration will be furnished on application. The following is the committee on recommendation: President Purinton, Professor F. B. Trotter, and Professor Deahl, secretary.

THE COLLEGE OF ARTS AND SCIENCES

THE FACULTY

DANIEL BOARDMAN PURINTON, LL.D., *President and Professor of Philosophy*

THOMAS EDWARD HODGES, D.Sc., *President Elect*

JAMES SCOTT STEWART, M.S., *Professor of Mathematics, Emeritus*

POWELL BENTON REYNOLDS, D.D., *Professor of Economics and Sociology, Emeritus*

ALEXANDER REID WHITEHILL, PH.D., *Professor of Chemistry*

SAMUEL B. BROWN, A.M., *Professor of Geology and Mineralogy*

ROBERT ALLEN ARMSTRONG, A.M., *Professor of the English Language and Literature*

ALFRED JARRETT HARE, A.M., *Professor of the Latin Language and Literature*

FREDERICK WILSON TRUSCOTT, PH.D., *Professor of Germanic Languages and Literatures*

HENRY SHERWOOD GREEN, LL.D., *Professor of the Greek Language and Literature*

JASPER NEWTON DEAHL, PH.D., *Professor of Education*

JOHN LEWIS SHELDON, PH.D., *Professor of Botany and Bacteriology*

JAMES MORTON CALLAHAN, PH.D., *Professor of History and Political Science*

ANTHONY WENCEL CHEZ, A.B., *Director of Physical Training*

JOHN NATHAN SIMPSON, M.D., *Professor of Anatomy and Physiology.*

JOHN HARRINGTON COX, A.M., *Professor of English Philology*

FREDERICK LAWRENCE KORTRIGHT, D.Sc., *Professor of Chemistry*

FRANK BUTLER TROTTER, A.M., *Professor of the Latin Language and Literature*

JOHN ARNDT EIESLAND, PH.D., *Professor of Mathematics*

ALEBRT MOORE REESE, PH.D., *Professor of Zoology*

OLIVER PERRY CHITWOOD, PH.D., *Professor of European History*

C. EDMUND NEIL, A.B., *Professor of Elocution and Oratory*

CHAUNCEY WILLIAM WAGGONER, PH.D., *Professor of Physics*

WILLIAM SEWARD WEEKS, B.S., *Professor of Military Science and Tactics and Commandment of Cadets*

MADISON STATHERS, PH.D., *Professor of Romance Languages*

WAITMAN BARBE, LITT.D., *Professor of English*

ENOCH HOWARD VICKERS, A.M., *Professor of Economics and Sociology.*

WILLIAM JACKSON LEONARD, *Associate Professor of Fine Arts*

SIMEON CONANT SMITH, A.M., *Associate Professor of Rhetoric*

DENNIS MARTIN WILLIS, LL.M., *Head of the Department of Commerce*

DAVID DALE JOHNSON, A.M., *Assistant Professor of English*

CLYDE EMIL WATSON, M.D., *Assistant Professor of Anatomy and Pathology.*

ARTHUR ROLLINS GRAVES, A.M., *Instructor in German*

ARLEIGH LEE DARBY, A. M., *Instructor in Romance Languages*

RACHEL HARTSHORN COLWELL, A.M., *Instructor in Domestic Science*

MARGARET BUCHANAN, A.B., *Instructor in Greek and Mathematics*

THOMAS BOND FOULK, B.S.C.E., *Instructor in Mathematics*

CHARLES MOON, B.S.C.E., *Instructor in Physics*

LOUISE FERRIS CHEZ, *Assistant Director of Physical Training*

FLORA RAY HAYES, A.B., *Assistant in Music*

ENTRANCE REQUIREMENTS

For admission to the College of Arts and Sciences, the candidate must have credit for fifteen units, obtained by examination or on certificate from a duly accredited secondary school.

Of the fifteen units which must be offered for admission to the curricula leading to the degree of Bachelor of Arts, nine are definitely prescribed as follows:

	Units
English	3
Latin	2
History	1
Mathematics	2
Algebra 1	
Plane Geometry 1	
Science	1
Physics, Chemistry, Botany, or Zoology, the entire unit being in one science.	
Total prescribed	9

The remaining six units must be chosen as electives from the following list:

	Units
Latin	1 to 2
Greek	2 to 3
German	2 to 3
French	2 to 3
Mathematics	½ to 1½
Algebra ½	
Solid geometry ½	
Plane trigonometry ½	
History and Civics	½ to 2
Physics	1
Chemistry	1
Botany	½ to 1
Agriculture	½ to 1
Zoology	½ to 1
Physical geography	½
Physiology	½
Drawing	½ to 1

A single unit of language will be accepted provided further work in that language is taken in the University.

For admission to the curricula leading to the degree of Bachelor of Science the requirements are the same as the foregoing, except

that a modern language may be substituted for the two units of Latin prescribed and an additional unit of mathematics is prescribed—one-half unit of algebra and one-half unit of solid geometry or plane trigonometry.

For admission to the curricula leading to the degree of Bachelor of Science in Commerce the requirements are the same as the foregoing except that a modern language may be substituted for the two units of Latin prescribed, and one unit of accounting and one-half unit of physical geography are prescribed, thus leaving four and one-half units to be chosen as elective.

For a detailed statement of the amount of work required for each unit of entrance credit see page 37.

DEGREES

BACCALAUREATE DEGREES

There are three baccalaureate degrees conferred in the College of Arts and Sciences:

1. The degree of Bachelor of Arts.
2. The degree of Bachelor of Science.
3. The degree of Bachelor of Science in Commerce.

Number of Courses

The credit is the standard for computing the amount of work required for graduation in the curricula leading to these degrees. The credit represents the amount of work done in one quarter (twelve weeks) in five recitation hours and ten preparation hours a week.

A baccalaureate degree in the College of Arts and Sciences is conferred upon any student who satisfies all entrance requirements and secures forty-two credits for college courses selected in accordance with the following provisions.

Groups of Studies

The subjects of study are arranged in three groups:

I. LANGUAGE: English, Latin, Greek, German, French, Spanish, Italian.

II. SCIENCE: Mathematics and Astronomy, *Engineering, Physics, Chemistry, Geology, Botany, *Horticulture, *Forestry, *Agronomy, *Animal Husbandry, *Farm Management, Zoology, *Entomology, Anatomy, Physiology, Bacteriology, Domestic Science, *Military Science, *Physical Training.

III. PHILOSOPHY: Philosophy, Education, History, *Law, Political Science, Economics and Sociology, *Commerce, *Music, *Fine Arts.

General Requirements

Major Subjects. When the student becomes a candidate for a degree he must select his major study from one of the above groups. Subjects marked with a star, however, cannot be chosen as majors for the A.B. or B.S. degrees. The work required in the major group is nine credits in one subject or six credits in one subject and three credits in another allied subject.

The head of the department to which the major subject belongs becomes the student's class officer. (See page 42.) When the student has selected his major subject, he will not be permitted to change to another major without the consent of the committee on classification and grades.

Minor Subjects. The student shall also select a minor study from each of the other two groups. The work required in each minor is six credits in one subject; or three credits in each of two allied subjects; or two credits in each of three allied subjects, provided in the last case, however, that the student has already offered work in these subjects for entrance credit.

Required English. English 10 and 11 are required of all candidates.

Special Requirements

For the degree of Bachelor of Arts:

(a) Ancient languages: In addition to the two units of Latin required for entrance, seven credits in ancient languages are required. The work may be seven credits in Latin, or four credits in Latin and three in Greek, or two credits in Latin and five in Greek.

(b) Modern languages: Three credits in a modern language are required.

For the degree of Bachelor of Science:

(a) Modern languages: Including the work offered for entrance a total of twelve credits in modern language is required, or, if two units of Latin were offered for entrance, nine credits in modern language are required. At least three credits each in French and German must be offered and at least six credits in some one language.

(b) Mathematics: Three credits in mathematics are required in addition to the units offered for entrance.

(c) Science: Nine courses in the science group.

(d) The major subjects must be selected from the science or the philosophy group.

For the degree of Bachelor of Science in Commerce:

(a) Languages: Six credits in modern languages are required.

(b) Philosophy: Four credits in history (courses 19, 23, 26, 28, 29, or 35 may be offered); three credits in law (courses 2, 6 and 19); and three credits in economics are required.

(c) Science: Three courses in any one subject.

(d) The major subject must be commerce.

Elective Courses

The remaining credits necessary to make up the total of forty-two credits required may be selected from any of the courses offered in the College of Arts and Sciences. Not more than five credits for courses in the College of Law or the College of Agriculture and not more than ten credits for courses in the College of Engineering may be included in the list of elective credits offered by students in the College of Arts and Sciences. The total number of credits for courses elected from other colleges shall not, however, exceed ten in all.

MASTER OF ARTS

The degree of Master of Arts is conferred upon graduates who have received the degree of Bachelor of Arts from West Virginia University or from another institution of equal grade, upon the following conditions:

1. The candidates must pursue studies in residence at this University for at least three quarters.

2. The application of the student to become a candidate for the degree of Master of Arts must be accompanied by the proper credentials and a general outline of the course of study.

3. If the application is accepted, the committee on classification and grades will appoint a sub-committee of three, consisting of the candidate's major professor and two other professors, whose duties shall be:

(a) To arrange and approve a specific course of study

(b) To act as advisers

(c) To examine and pass upon the thesis

(d) To conduct the final oral examination

4. The candidate shall present nine credits, and a thesis, or with the consent of the sub-committee two additional credits may be substituted for the thesis; at least three of the nine credits shall belong to his major subject. In no case shall the aggregate of major credits be fewer than twelve. The remainder of the student's work shall be in one or more allied subjects.

5. The specific course of study must be presented to the com-

mittee on classification and grades within the first four weeks after the opening of the fall term.

6. If the candidate presents a thesis it shall show marked attainment in his major subject. The thesis shall be prepared under the direction of the head of the department in which the student has his major, and shall be submitted for the approval of the committee on classification and grades at least four weeks previous to the commencement day at which the degree is expected. The thesis shall be presented in such form as the committee on classification and grades shall prescribe and approve.

7. If the thesis is approved, two typewritten or printed copies shall be deposited in the University library at least one week before the degree is to be conferred.

8. The oral examination shall cover the thesis and the major courses pursued by the candidate, or such part thereof as the sub-committee shall deem desirable.

9. The committee on classification and grades will set the time for the oral examination and shall appoint some one to represent them at the examination. The examination must be held at least three weeks before commencement day.

10. The sub-committee will report their opinion of the thesis and the result of the examination to the committee on classification and grades at least ten days before commencement day.

11. No work done before graduation will be credited toward the master's degree.

12. In case a student has failed to take the A.M. degree within two years after his course of study has been approved, his candidacy shall lapse and can be renewed only upon a new application to the committee on classification and grades.

MASTER OF SCIENCE

The degree of Master of Science is conferred upon students whose baccalaureate degree has been in science, upon the same conditions as those governing candidates for the degree of Master of Arts, stated above.

DOCTOR OF PHILOSOPHY

The degree of Doctor of Philosophy is conferred upon Masters of Arts of West Virginia University, or holders of an equivalent degree, upon the following conditions:

1. Candidates must have spent at least two years in resident study at some university, and must be in residence at this University during the last three quarters before receiving the degree. The requirements

of time, however, are wholly secondary. The degree will not be given for the completion of prescribed work, nor for study during a stated period, but only on the ground of long study and high attainments in one branch of learning.

2. The method of application, appointment of sub-committee, etc., shall be the same as for the degree of Master of Arts, described in sections 2 and 3 on page 59.

3. Candidates shall choose a major subject and cognate minor work. To the latter they shall devote not more than one-third of their time.

4. The candidate must prepare (under the direction of the head of the department in which he has his major) a dissertation which shall give evidence of his power of independent investigation, and shall be a real contribution to knowledge.

5. Not later than nine months before the date on which the candidate expects to receive the degree, he shall file with the committee on classification and grades the subject of his thesis, with the approval of his major professor, a full statement of his work in candidacy for the degree, and shall satisfy this committee of his ability to use French and German in his investigation.

6. The thesis shall be presented to the committee on classification and grades at least two months before the date on which the degree is expected. It shall be referred to a committee of three, one of whom shall be a person not connected with the University. If the thesis is approved, the candidate shall proceed to an examination, which shall be conducted by the instructors in charge of his subjects, with the aid of the same committee of three, the sub-committee and the committee on classification and grades. The date of the examination shall be determined by the committee on classification and grades.

7. If the candidate satisfactorily passes the examination he shall, before receiving the degree, deposit with the librarian of the University a typewritten or printed copy of the thesis, but if the thesis cannot be published before the conferring of the degree the candidate must either furnish the committee on classification and grades evidence of completed arrangements for publication or deposit with the treasurer of the University a sufficient sum to cover the cost of publication in approved form. When the thesis is published one hundred copies shall be presented to the University library and the deposit made with the treasurer will be returned.

SPECIAL DEPARTMENTAL ANNOUNCEMENTS

DEPARTMENT OF COMMERCE

For the purpose of enabling young men to start in business with the advantages of a trained mind and a scientific knowledge of modern business methods and conditions, a four year curriculum is offered leading to the degree of Bachelor of Science in Commerce. In the arrangement of this curriculum an effort has been made to combine general culture subjects with instruction in economic laws in their relation to the various departments of trade, in commercial and industrial organization, and in general and special accounting.

For a statement of the entrance requirements for this curriculum see page 57. For the statement of the requirements for graduation see page 58.

Suggested Partial Schedule for B.S. Com. Students.

Freshman

	Fall	*Winter*	*Spring*
8:30	German 4 or French 4	German 5 or French 5	German 6 or French 6
9:30			History 19
10:30	English 10	English 11	Accounting 5
11:30	Accounting 4	Commercial geography 18	

Sophomore

8:30	Economics 1	Economics 2	Economics 3
9:30			History 23
10:30	Accounting 6	Accounting 7	Accounting 8
11:30	History of commerce 19	History 26	

Junior

8:30	Banking 12		
9:30	Cantracts (Law 4)	Negotiable paper (Law 5)	Sales (Law 6)
10:30		Transportation 17	
11:30			History 29
2:00	Money and banking 4	Public finances.5	

Senior

9:30 Accounting 10	Corporation and trust finance 13	Bank administration 14
10:30	Geology 5	
11:30	Political science 35	

Diploma in Commerce.—A shorter curriculum in commerce, covering two years, is also provided. A special diploma or certificate is awarded on its satisfactory completion. Students desiring admission must satisfy nine units of the entrance requirements for admission to the College of Arts and Sciences. Two units in English, one unit in mathematics, one-half unit in physical geography, one-half unit in bookkeeping, one-half unit in drawing, one unit in history, and one-half unit in civil government are prescribed.

The special diploma or certificate will be granted to any student who satisfies the above entrance requirements and secures twenty-two credits for prescribed college courses indicated below:

Department and subject	Course Numbers	Credits
English:—		
Composition	10	1
Rhetoric	11	1
Commerce:—		
Special accounting	4	1
Corporation accounting	8	1
Practical banking	12	1
Economics:—		
Principles of economics	1	1
Distribution of wealth	2	1
Money and banking	4	1
Public finance	5	1
Commercial Law:—		
Law of contracts	4	1
Negotiable paper—suretyship and guaranty	5	1
Bailments and carriers	32	1
History:—		
Commercial geography	1	1
English social and industrial history	19	1
American social and economic development	28	1
Approved Electives:—	..	6
Total		22

Stenography and Elementary Accounting.—Instruction in elementary accounting, stenography, and typewriting is provided for students who desire it in preparation for the courses in commerce or as parallel work with these courses, in connection with the Preparatory Department.

DEPARTMENTS OF MEDICAL SCIENCES

Students in the College of Arts and Sciences who wish to specialize in the medical sciences with the view of preparing themselves for the study of medicine should register as candidates for the degree of Bachelor of Science and as far as possible should follow the schedule of courses indicated below. Students who declare their intention of following this schedule will be relieved from the requirements in freshman mathematics otherwise made of B.S. students.

Suggested Schedule for B.S. Students (Medical Sciences Curriculum)

Freshman Year

Science:—Zoology, courses 1, 2 and 3; Chemistry, courses 1, 2, and 3. If chemistry has been offered for entrance three electives from the philosophy group must be taken instead.

Language:—English, courses 10 and 11; French or German, three courses.

Sophomore Year

Science:—Botany, courses 3 and 4; Zoology, course 9 and course 10 or 15.

Language:—French, three courses; German, three courses.

Elective:—One course from the philosophy group.

Junior Year

	Fall	*Winter*	*Spring*
8:30	Physiology 3	Physiology 4	Physiology 5
9:30	Osteology 1	Physiology 6	Pharmacology 1
10:30	Zoology 6	Physiology 6 continued	Pharmacology lab.
11:30	Zoology 6 continued	Elective 8	Pharmacology lab. 3 days a week Zoology 14, 1-2, 2 days a week

1:30 to 4:00	Anatomy 11	Anatomy 2	Anatomy 3, 1-2, 6 weeks Zoology lab., 6 weeks

Senior Year

8:30 to 9:30	Bacteriology 3 Pharmacol. 2	Anatomy 12	Anatomy 13
10:30 to 11:30	Chemistry 11	Chemistry 12	Chemistry 13
1:30 to 4:00	Bacteriology lab.	Anatomy 4	Anatomy 5, 1-2, 6 weeks Anatomy 21, 1-2, 6 weeks

Students who enroll in the College of Arts and Sciences with the intention of completing one year of academic work in preparation for admission to a college or school of medicine should offer either for entrance or as part of their freshman work the following courses in science or their equivalent:

Chemistry, courses 1, 2, and 3.
Physics, courses 1 and 2.
Zoology, courses 1, 2, and 3.
Botany, course 3.

Students who do not desire to become candidates for the B.S. degree but who wish to prepare for entrance with advanced standing at a medical college may be admitted to the work of the last two years of the curriculum outlined above as soon as they have credit for all entrance requirements and for the courses in science named in the preceding paragraph.

DEPARTMENT OF DOMESTIC SCIENCE

Teachers' Certificate in Domestic Science. A special curriculum covering two years is offered for the benefit of those who wish to prepare to teach domestic science in the public schools. A special teacher's certificate in domestic science will be given to students who satisfy the requirements for entrance to the Bachelor of Science

curricula and secure twenty-two credits for the college courses outlined below.

Schedule of Courses for Teachers' Certificate in Domestic Science

First Year

Hour	*Fall*	*Winter*	*Spring*
8:30		Dom. Science 4	
9:30	Fine Arts 1	Fine Arts 2	English 11
10:30	English 10		
11:30	Chemistry 1	Chemistry 2	Chemistry 3
1:30	Dom. Science 1	Dom. Science 2 Tu., W., and F.	Dom. Science 3 Tu., W., and F.
2:30		Dom. Sc. lab. W. and F.	Dom. Sc. lab. W. and F.

Second Year

8:30			
9:30	Dom. Science 5	Psychology	Dom. Science 7
10:30	Dom. Sc. lab.	Dom. Science 6	Bacteriology*
11:30	Education 4	Education 5	Dom. Science 8
1:30	Dom. Art 11, 3-5 M., W., and F. Mech. Draw, 20, 2-5 Tu. and Th.	Dom. Art 12	Dom. Art 13

*For the present a special course in bacteriology will be arranged for students in domestic science in connection with the work offered in that subject in the School of Agriculture and Domestic Science.

COURSES OF INSTRUCTION

In the following announcements unless otherwise noted, each course described counts as one credit, the class meeting five times a week, Mondays to Fridays inclusive, through one entire quarter. Whenever possible, the quarter during which the course is given, the hour, the name of the instructor, and class room, are stated at the end of the announcement of each course. For convenience it is customary to designate the courses of study by the name of the department and the number of the particular course. Thus the course in psychology is known as "Philosophy 2"; the course in plane trigonometry is known as "Mathematics 9"; the course in electrical measurements is known as "Physics 15"; etc. The abbreviations used are: W., Woodburn Hall; S., Science Hall; M., Martin Hall; M. H., Mechanical Hall; C., Commencement Hall; A., Agricultural Experiment Station; S. F., South Fife Cottage; N. F., North Fife Cottage; G., Gymnasium; L., Library.

AGRONOMY AND ANIMAL HUSBANDRY

Credit will be given in the College of Arts and Sciences for course 1 and 2 in Agronomy and course 1 in Animal Husbandry in the College of Agriculture. See pages 175-6.

ANATOMY AND PATHOLOGY

Assistant Professor WATSON

1. Osteology. Informal talks and quizzes on the bones, joints and ligaments of the human skeleton. Each student is supplied with a set of bones for study outside of the class room.

Fall, 9:30; Anatomical Laboratory.

2. Dissection. Careful dissection of the body with reference to nerves, blood vessels, and muscles. The cadaver is divided into three parts, each student dissecting an arm, a leg, including the abdominal viscera, and the head, including the thoracic viscera. For each part a fee of five dollars is charged. Winter, Anatomical Laboratory.

3. Dissection. Continuation of course 2. One-half credit.

Spring, Anatomical Laboratory.

4. Dissection and Quizzes. Continuation of course 3.

Winter, 1:30—4:00 p. m.; Anatomical Laboratory.

5. Dissection and Quizzes. Continuation of course 4. One-half credit. Spring, 1:30—4:00 p. m.; Anatomical Laboratory.

11. Normal Histology. A microscopic study of the different organs and tissues of the human body and of animals.

Fall, 1:30 to 4:00; S. F.

12. Pathology. Gross and microscopic study of diseased tissue, organs and new growths; the more common tumors. Prerequisite,

Anatomy 1 and Medical bacteriology. Winter, 8:30 to 10:30; 8 W.

13. Pathology. Continuation of course 2. Spring, 8:30 to 10:30; 8 W.

21. Physical Diagnosis. A six weeks' course in regional anatomy designed to acquaint the student with methods of examining patients. One-half credit.

Spring, hours to be arranged; Professor SIMPSON; 9 W.

BOTANY AND BACTERIOLOGY

Professor SHELDON

The laboratories for botany and bacteriology are supplied with gas and electricity, hot and cold water, reagents, glassware, sterilizers, incubators, microscopes and accessories, dissecting lenses, microtomes, paraffine oven, water baths, and the simpler physiological apparatus.

Students will find it to their advantage to consult with the head of the department before registering for courses in botany and bacteriology.

Botany.

3. General Botany. An introductory study of the cell is followed by the morphology and physiology of representative species of the algae and fungi. Lectures, recitations, and laboratory work.

Fall, Monday, Wednesday, and Friday, 9:30; laboratory, Monday, Wednesday, and Friday, 1:30; N. F.

4. General Botany. Continuation of course 3. Morphology and physiology of liverworts, mosses, ferns, and seed plants. Lectures, recitations, and laboratory work. Winter, hours as in course 3; N. F.

5. Systematic Botany of Vascular Plants. Practice in description, identification, and classification. Each student will collect, determine, and hand in for inspection, at least fifty species, from one of the following groups: a general collection, ferns, grasses and sedges, shrubs and trees, weeds and weed seeds, or some other special group. Lectures, laboratory, and field work.

Spring, 1:30; continued in the Fall and Winter, hours to be arranged; N. F.

Note. Courses in systematic botany of the fresh water algae, fungi, liverworts, and mosses will be arranged for students who have had suitable training for such courses.

6. Plant Physiology. A fundamental course on the relation of plant structure to stimulus and function. Lectures, recitations, and laboratory work. Winter, hours to be arranged; N. F.

7. Plant Pathology. An elementary course on the nature, causes, and control of the common diseases of cultivated plants. Lectures, recitations, required readings, laboratory and field work.
Spring, hours to be arranged; N. F.

8. Advanced Plant Pathology. The critical investigations of an approved problem with frequent conferences. One or more credits. Throughout the year, hours by appointment. N. F.

Bacteriology.

1. General Bacteriology. This course is recommended as a preparation for other courses in bacteriology and plant pathology. It may be elected by students who desire a general knowledge of bacteriology and bacteriological technique. Methods of sterilization and disinfection and the preparation and use of culture media are followed by a study of the morphology and life activities of selected non-pathogenic and pathogenic bacteria. Lectures, recitations, and laboratory work. Winter, Monday, Wednesday, and Friday, 8:30; laboratory, Monday, Wednesday, and Friday, 1:30; N. F.

2. Agricultural Bacteriology. Bacteria in their relation to fermentation and decay, to soils and crops, to the pollution of water supplies, to milk and its products, and to the diseases of cultivated plants and domestic animals. Lectures, recitations, and laboratory work. Spring, hours as in course 1. N. F.

3. Medical Bacteriology. This is primarily a laboratory course, supplemented by lectures and recitations, on the preparation, sterilization, and use of culture media, followed by a study of the morphology and life activities of selected non-pathogenic and pathogenic bacteria, by means of cultures, inoculation of animals, and the examination of exudates. Fall, hours as in course 1. N. F.

CHEMISTRY

Professor WHITEHILL and Professor KORTRIGHT

The rooms assigned to this department consist of a lecture room and four large laboratories. Connected with these are a dark room, two weighing rooms, and two preparation rooms. The laboratories afford working space for one hundred students at a time and are supplied with water, gas, chemicals, and apparatus necessary for practical work. This apparatus includes a large number of pieces used in illustrating the elementary principles of the science, as well as of the more expensive instruments used in analytical work. A collection of the latest reference and text-books is kept within easy reach of the students.

1. Inorganic Chemistry. This course is designed for beginners and serves as a general introduction to chemical methods and opera-

tions. It includes a systematic study of the laws of chemical combinations, the sources, preparation, properties, and compounds of the non-metallic elements, and the principles and theories of chemical philosophy. Experimental lectures, laboratory work, and recitations.

Fall, first section, 9:30; second section, 11:30; Professor WHITEHILL, 20 S.

2. Inorganic Chemistry. This course includes the study of the metallic elements, and special attention is paid to the application of chemistry to agriculture, engineering, medicine, and every-day life.

Winter, first section, 9:30; second section, 11:30; Professor WHITEHILL, 20 S.

3. Organic Chemistry. This course includes the study of the more important organic compounds, together with the laboratory processes for the preparation of such compounds. Lectures, laboratory work, and recitations.

Spring, first section, 9:30; second section, 11:30; Professor WHITEHILL, 20 S.

On Mondays at 1:30, during the Winter and Spring quarters, a special laboratory course is given to accompany courses 1, 2, and 3, which is prescribed for all students who are taking the courses named. Students who have completed these courses elsewhere, and have received credit for the same, may be admitted to this laboratory course and will receive credit for the work done. This work is conducted jointly in the laboratories of the department by Professors Whitehill and Kortright, with the assistance of students who have taken advanced work in chemistry.

4. Qualitative Analysis. This is a laboratory course, treating of the separation and detection of the common elements. Students taking this course are under the constant and direct supervision of the instructor, and they are expected to be able at any time to answer questions concerning the theory and practice of their work. One-third credit.

Fall, Tuesday and Thursday or Wednesday and Friday, 1:30; Professor KORTRIGHT.

5. Qualitative Analysis. Continuation of course 4. One-third credit.

Winter, Tuesday and Thursday or Wednesday and Friday, 1:30; Professor KORTRIGHT, 22 S.

6. Elementary Quantitative Analysis. This course includes a small number of simple gravimetric, volumetric, and electrolytic determinations, together with the study of the operations involved. One-third credit.

Spring, Tuesday and Thursday or Wednesday and Friday, 1:30; Professor KORTRIGHT.

7. Analysis of Coal, Coke, and Water. This is a course designed especially for engineering students, but open to all others who have the necessary preliminary training. One-third credit.

Spring, Tuesday and Thursday or Wednesday and Friday, 1:30; Professor KORTRIGHT, 22 S.

8. Toxicology. Designed especially for medical students. The course includes a study of inorganic and organic poisons, and their physiological effects, and their antidotes. One-third credit.

Spring, Tuesday and Thursday, 1:30; Professor KORTRIGHT, 22 S.

9. Quantitative Analysis. The work of this course includes a study of the theory and practice of the quantitative separation and determination of the different elements; the analysis of minerals and technical products; the proximate and ultimate analysis of organic compounds; the investigation of foods; sanitary water analysis; gas analysis.

Fall, Winter, Spring, 1:30; Professor KORTRIGHT, 22 S.

10. Quantitative Analysis. This course includes practice in the analysis of iron and steel, iron ores, limestone, dolomite, sand, clay, and other materials usually brought to the laboratory of an iron and steel works. The special methods employed are those used in the laboratories of the iron and steel works located in the Pittsburg district. One-half credit.

Fall, Winter, Spring, Tuesdays and Thursdays, 1:30; Professor WHITEHILL, 21 S.

11. Medical Organic Chemistry. A lecture and laboratory course in special subjects of organic chemistry; as carbohydrates, fats, proteids, and foods in general. Prerequisites; courses 1, 2, and 3.

Fall, 10:30 to 12:30; Professor KORTRIGHT, 22 S.

12. Medical Organic Chemistry. Continuation of course 11.

Winter, 10:30 to 12:30; Professor KORTRIGHT, 22 S.

13. Medical Analysis. The study and practice of the analytical methods used in modern medicine.

Spring, 10:30 to 12:30; Professor KORTRIGHT, 22 S.

14. Organic Chemistry. This course and the following courses are intended for students who specialize in chemistry. They consist of two lectures, or recitations, and at least six laboratory hours each week. Fall, 9:30; Professor KORTRIGHT, 22 S.

15. Organic Chemistry. Continuation of course 14.

Winter, 9:30; Professor KORTRIGHT, 22 S.

16. Organic Chemistry. Continuation of course 15.

Spring, 9:30; Professor KORTRIGHT, 22 S.

17. Chemical Preparations. This course is designed to meet the requirements of students who wish to specialize in chemistry, or who wish to become teachers of the science. Exercises in the con-

struction and fitting up of apparatus will be given, and chemical manipulation will receive special attention. Quantitative work in the verification of chemical laws will be undertaken, and the course will be made as fully illustrative of laboratory processes as possible. One-half credit.

Fall, Tuesday and Thursday, 1:30; Professor WHITEHILL, 21 S.

18. Chemical Preparations. This course is a continuation of course 17. It will include the preparation and properties of some typical organic compounds, and the work will be mostly quantitative in character. One-half credit.

Winter, Tuesday and Thursday, 1:30; Professor WHITEHILL, 21 S.

19. Chemical Calculations. This course is designed for students who wish to study the mathematical principles which are involved in chemical operations. It includes the consideration of questions in volving weight and volume reactions, atomic and molecular weight determinations, the methods of calculating the results of analyses, and the various other computations of importance to the student of chemistry. One-half credit.

Spring, Tuesdays and Thursdays, 1:30; Professor WHITEHILL, 21 S.

20. Special Work. Chemistry offers a wide field for investigation. Special work in any of the various departments of the science may be taken in the laboratory under the direction of the instructors, and credit will be given in proportion to the amount of work accomplished.

For courses in agricultural chemistry, see announcements of the College of Agriculture, page 177.

CIVIL ENGINEERING

Credit will be given in the College of Arts and Sciences for certain courses in the subject given in the College of Engineering. See page 146.

COMMERCE

Mr. WILLIS and Mr. KING

Only the courses marked by an asterisk can be offered as electives by candidates for the B.A. or B.S. degrees.

4. Special Accounting. A theoretical course in keeping the accounts in special lines of business. The object of this course is to familiarize the student with nomenclatures of the various lines of business, and to furnish him with a practical working knowledge of the special accounts necessary to handle the specific lines of trade. Department store accounts is a feature of this course. The work outlined in the text-books has been taken from actual accounts kept

in the different kinds of business mentioned. Prerequisites, Accounting 1 and 2. Fall, 11:30; Mr. WILLIS, 12 M.

5. Special Cost Accounting. Accounting necessary to obtain at any time the exact cost of articles produced by the manufacturer, the origin and cost of raw material; record of stock on hand, and consumption in process of manufacture; comprising purchase record and invoice system, freight distribution, stock and store room systems and records, the various methods by which material is transferred from stock to the process of manufacturing, perpetual inventories, requisitions, etc.; labor in relation to cost, pay bills; distribution sheets and safeguards in connection with payment. Manufacturing expenses, costs of factories, etc.

Fall, 10:30; Mr. WILLIS; 12 M.

6. Railroad Accounting—Station Work. The course covers the entire work done in a railroad freight station from the loading of cars to the minutest detail in the office work. The student learns station work as it is carried on today by the use of a complete set of vouchers like those used by the Baltimore and Ohio and Pennsylvania railroads. The technical work embraces the classifying of freights, rating, auditing, checking, adjusting discrepancies, excess tonnage, demurrage, routing, apportioning rates, etc. Text, Graden System Railroad Technical Training., Prerequisite, Accounting 1. Omitted in 1911-12.

7. Railroad Accounting—General. An examination of the system of accounting necessary to meet the demands of the complicated railroad methods of modern times, embracing organization, capitalization, speculation, rate-making, competition, pooling, consolidating and general stock manipulation, etc. Prerequisites, Accounting 4 and 6. Spring, 10:30; Mr. WILLIS; 12 M.

8. Corporation Accounting. A course presenting the accounting necessary in the formation of a corporation and its operation The records of the secretary of the corporation and the accounts growing out of the minutes, etc.; the accounts affected by the issuing of installment certificates of stock, by their transfer, by their surrender, by the issuing of stocks, and of additional stocks, by dividends, by changes from partnerships into corporations, etc.; methods of preparing financial statements for publication. Prerequisite, Accounting 3. Winter, 10:30; Mr. WILLIS, 12 M.

***9. Accounting Procedure.** Installation of accounting systems; theory of accounts and its adaptability to practical work; books of original entry, their connection with the general scheme of business; analysis of accounts of trades, corporations, and executors, etc.; depreciation of current assets and liabilities, fixed and working capital, expert methods of opening and closing accounts in various

lines of trade; realization and liquidation of accounts, statements of affairs of insolvent debtors; statements prepared for establishing a commercial rating and credit; a consideration of personal and impersonal accounts; the best methods of combining for quick and accurate consideration of the condition of the business, etc.

Spring, 8:30; Mr. WILLIS; 12 M.

*10. **Auditing.** The course is based on an assumed knowledge of accounts both as an art and as a science. The student passes naturally from a study of practical accounts and the theory of accounts to that of professional examinations and oversight. The study is conducted from the standpoint of traveling or assistant auditor, or that of the expert accountant. Special attention is given to reports of auditors and finance committees of states, corporations, and municipalities, etc. Winter, 9:30; Mr. WILLIS; 12 M.

11. **Executors and Trustees.** This course exhibits the best methods for financial reports of executors and trustees, and the legal rights and duties of trustees and executors so far as they relate to accounting. Omitted 1911-12.

*12. **Practical Banking.** The object of this course is to give the student a comprehensive knowledge of the inside workings of a bank, and of the laws regulating national and state banks. The subjects treated are deposits, duties of depositors; reserves, loans and discounts; circulating notes, credit and commercial paper; accommodation paper; checks and bills of exchange; branch banking; the duties of officers and clerks; the liabilities of directors and stockholders; and bank management in general. An effort will be made to have some special lectures by experienced bankers in connection with this course. Fall, 8:30; Mr. WILLIS; 12 M.

13. **Corporation and Trust Finance.** An exposition of the financial organization and conduct of large corporations; the accounting necessary in railroad and industrial combinations and mergers; a review of the laws and the customs that govern the financial management of foreign corporations. Fall, 9:30; Mr. WILLIS; 12 M.

14. **Bank and Trust Company Administration.** This course furnishes a complete exposition of all the methods of accounting which relate principally to banks and modern trust companies. In connection with the lectures in this course, blanks and forms collected from the best regulated banks and trust companies in the country are examined by students. Prerequisite, Accounting 3.

Spring, 9:30; Mr. WILLIS, 12 M.

15. **Insurance.** A treatment of the law governing insurance in general. Form and nature of the contract; effects of way; consummation of contract; termination and revival; subject matter;

insurable interest, agents, powers and duties; warranties, application, construction, representations, concealments; special provision for special vocations; alienations; title, health, habits, age, etc. Premiums; over-valuation; assignment of policy; beneficiaries; duration, and risk; of loss and its adjustment; subrogation; creditors; of notice, preliminary proof; of accident insurance; of guarantees and other kindred insurances; mutual insurance; remedies, etc.

Omitted in 1911-12.

16. Secretarial Work. A series of studies designed to prepare students for secretarial positions, particularly in corporation work. The student is given stenographic exercises and special attention is devoted to corporation practice and business methods.

Spring, 8:30; Mr. KING; 18 M.

***17. Transportation.** A history of the various systems of transportation in the United States and the methods used in carrying on commerce between this and other countries, and a study of express companies, the United States postal service, and the telegraph and telephone systems and their influences on commerce.

Winter, 10:30; Mr. KING; 18 M.

***18. Commercial Geography.** A description of the surface of the earth, with special reference to the production, manufacture, transportation and exchange of articles of trade. A general outline of the countries of the world; soil, climate, agricultural products, forests, manufactories, quarries, mines, centers of industry, foreign relations, ways of communication, social relations and conditions, imports, exports and markets. Special attention is given to the study of the United States. Text-book, Adams' "Commercial Geography." Winter, 8:30; Mr. WILLIS; 12 M.

***19. History of Commerce.** History of commerce; methods of exchange in ancient times; shipping of the ancients; fairs and markets; results of maritime discoveries; changing the commercial routes; international treaties affecting commerce; scientific and industrial discoveries affecting commerce; trade restrictions; consuls and modern commerce; boards of trade; stock and produce exchanges; modern modes of preparing and shipping articles of merchandise; circulation of commodities between cities and countries; trade statistics; dependence of manufactures upon producers of raw material; nomenclature of commerce. Text-book, Webster's "History of Commerce." Fall, 11:30; Mr. KING; 18 M.

20. Consular Service. A brief history of the consular service, the methods of selecting consuls and the organization of American consul service, followed by a technical study of the training and the duties in regard to appointments, etc. Omitted in 1911-12.

21. Consular Service. The study of the trade route of the different markets, particularly new markets; of the means used for securing markets; of the publication and the distribution of information secured concerning trade conditions in different parts of the world. The instruction is by lectures and the use of consular reports, etc. Omitted in 1911-12.

DOMESTIC SCIENCE

Miss COLWELL

Note.—All the courses in domestic science may be offered toward the B.S. and and the B.S.Agr. degrees. B.S. students who make domestic science their major are relieved from the freshman mathematics otherwise required. (See page ....). Courses marked with a star may be offered for credit toward the A.B. degree.

***1. Selection and Preparation of Food.** A study of the chemical composition, relative physiological and economic value of the animal foods and their products; processes in production of raw food material. Practical application is given of the methods by which heat is applied to the food material. Visits are made to sources of food supply. Two lectures and six hours of laboratory work per week.

Fall, Tuesday and Thursday, 1:30; laboratory, Monday, Wednesday, and Friday, 1:30; 2 W.

***2. Selection and Preparation of Food.** Continuation of course 1. A study of the chemical composition, relative physiological and economic value of the vegetable foods and their products; pure food laws; principles of diet. Practical application is given in simple food

Winter, Wednesday and Friday, 1:30; laboratory, Tuesday, 1:30, Wednesday and Friday 2:30; 2 W.

***3. Selection and Preparation of Food.** Continuation of course 2.

Spring, recitation and laboratory hours, same as in course 2; 2 W.

***4. Hygiene.** The purpose of this course is to give such knowledge of the structure and function of the body as is essential to an understanding of the principles fundamental to the maintenance of normal health. Hygiene of the organs of digestion, excretion, sound, sight; hygiene of exercise and clothing. Special lectures.

Winter, recitations, 8:30; laboratory, Thursday, 1:30; 2 W.

***5. Dietetics.** Study of digestion, absorption, assimilation of food constituents; methods of determining food requirements; amount of food required for the nutrition of the normal adult at rest and at work; diet for infancy, youth, old age; special diets; cost of family dietaries. The principles established in the recitation are practically illustrated by the students in the laboratories. Two lectures and six hours of laboratory work. Prerequisite, Domestic science 1, 2, and 3.

Fall, Monday and Wednesday, 9:30; laboratory, Tuesday, Thursday and Friday, 9:30; 2 W.

6. Home Architecture and Sanitation. The course includes the following topics: sanitary location of the house; simple house plan; soil, water and air in their relation to the hygiene of the house; care of the house from a sanitary standpoint; systems of lighting, heating, ventilation, disposal of waste; water supply; duties of householder in questions affecting the public health. Recitations and one two-hour laboratory period. Prerequisite, Fine Arts 1 and 2.

Winter, recitation 10:30; laboratory, Monday 1:30; 2 W.

7. Household Administration. Study of the cost of hygienic and artistic furnishing of the home; division of the income; domestic accounts; organization of the home. Lectures and one two-hour laboratory period. Prerequisite, Domestic science 6.

8. Domestic Science in Public Schools. This course includes the following subjects: planning of the equipment; correlation with other subjects in the school; practice in planning courses. Prerequisite, all domestic science and domestic art courses offered.

Spring, 11:30; 2 W.

Domestic Art

11. Handwork. Plain sewing; different stitches used in sewing are practically applied in the making of simple underments and in the problems of repair; use and care of the machine. Nine hours of laboratory work. Three-fifths credit.

Fall, Monday, Wednesday and Friday, 1:30;

12. Textiles and Dress. Study of fibres and fabrics from the historic, economic and artistic aspect; problems of shrinkage and combination of material with special reference to the problems of color and design in costumes; the drafting and making of shirtwaists and simple wash dresses. Recitations and laboratory work.

Winter, 130;

13. Textiles and Dress. Continuation of course 2.

Spring, 1:30;

ECONOMICS AND SOCIOLOGY

Professor VICKERS

It is the aim of this department, as at present constituted, to give elementary and practical instruction in economics and sociology, such as will meet the requirements of a good college course and serve as an introduction to special and advanced studies in these branches. Instruction is given by means of text-book lessons, lectures, recitations, reviews, exercises and references to standard works. Some changes in the work of this department for the year 1911-12 are to be announced later.

Economics

1. Principles of Economics. An introduction to the study of the general subject of political economy. Special attention is given to the exposition of fundamental laws as operating in the production, distribution, exchange and consumption of wealth.

Fall, 8:30; 14 S.

2. Distribution of Wealth. The features and tendencies of modern industrial organization; rent, interest, wages, profits, profit-sharing, cooperation, socialism; capitalistic and labor combinations; monopolies; state regulation of corporations and industrial organizations. Winter, 8:30; 14 S.

3. Labor Problems. This history and status of labor; labor organizations, their origin, development, objects, methods, achievements and prospects; industrial, social and political power and influence of labor unions; arbitration and conciliation. Spring, 8:30; 14 S.

4. Money and Banking. A discussion of the nature and functions of money; an examination of the monetary system of the United States with a comparison of the monetary systems of the leading nations of the world; a sketch of monetary theories and proposed reforms; nature and functions of banks, and some requisites for an adequate national currency. Fall, 9:30; 14 S.

5. Public Finance. A study of public expenditures, sources of revenue, principles and methods of taxation, financial policies, public debts and public credit. Winter, 9:30; 14 S.

6. Public Economics. An examination into the relation, interests, rights and powers of the state in regard to economic enterprises; the practicability and expediency of public ownership and control of such enterprises, with a study of the history and results of such control so far as it has been undertaken.

Spring, 9:30; 14 S.

7. History of Economics. An outline of the history of economic conceptions and theories from the earliest times to the present; a sketch of the economic literature of Europe and the United States; economic conditions and the rise of industries; modern industrialism, its rise, characteristics and tendencies. (Omitted in 1911.)

Spring, 9:30; 14 S.

Sociology

1. Historical Sociology. An outline of theories of the origin and development of the human species; or the origin, location and characteristics of the different races of men; of the rise and growth of institutions and arts such as language, government, religion, and

the various forms of industry and other leading social activities.
Fall, 10:30; 14 S.

2. Analytical Sociology. An examination of the structure and functions of contemporary society—social elements, social forces, social organs, social activities, social conditions and social products.
Winter, 10:30; 14 S.

3. Practical Sociology. An outline of the history and work of organizations for social betterment and reform; of contemporary charities, their methods and results, and of the treatment of the dependent, defective and delinquent classes. Spring, 10:30; 14 S.

EDUCATION

Professor DEAHL

The courses offered in this department aim to contribute to the educational influences and to the professional efficientcy of the schools of the state in the following ways: 1, To interest those students who may without intending to use the knowledge in teaching desire to study the science of education as a part of their general culture. 2. To afford university students who wish to teach for a time after graduation the means of professional training commensurate with their academic training. 3. To furnish appropriate professional education to University students, and to any experienced teachers of suitable age and the attainments, who may desire to fit themselves for teachers, principals, or superintendents of schools.

Students who elect education as their major are urged to do sufficient work in some one department to prepare them to teach a particular subject, as English, physics, mathematics, etc.

1. History of Education, Ancient and Mediaeval. A study in the evolution of ideas and of education ideals; education as a social factor in the development of civilization. A brief study of some one Oriental system such as the Chinese, Hebrew, or Egyptian education; the forces and ideas and ideals that fashioned ancient eduction—social bonds, individualism, reason, moral freedom, etc.; the development of the Christian schools, moslem education, the seven liberal arts, monasticism, scholasticism, rise of universities, the renaissance and reformation, teaching organizations.
Fall, 9:30; 24 W.

2. History of Education, Modern. A study in the development of education since the reformation. The development of modern educational theory—(a) the humanistic, (b) the realistic, (c) the scientific; physiological, psychological, and sociological ideas of education; the development of modern national, state, and city systems and of modern programs of studies and of method.
Winter, 9:30; 24 W.

3. Modern Educational Theory. The purpose of this course is to trace the development of modern educational thought to the present time. A summary of the theory and practice of mediaeval education will be followed by a study of the educational doctrines as found in the lives and writings of Pestalozzi, Herbart, Froebel, and other reformers. Spring, 9:30; 24 W.

4. Philosophy of Education. This course aims to lay the basis of a scientific theory of education. The process of education is explained from the standpoint of the doctrine of evolution; the principles thus arrived at are applied from the standpoint of the history of civilization, the developing powers of the child, and the cultivation of individual and social efficiency. Fall, 11:30; 24 W.

5. Philosophy of Education. A continuation of course 4. Winter, 11:30; 24 W.

6. School Administration and Supervision. This course is intended primarily for principals and superintendents of schools, and for those who are preparing for such school work. The course deals with such topics as: school boards, school buildings and grounds, school equipment, the preparation of principals and superintendents, the preparation of teachers, the selection and promotion of teachers, city and rural supervision, examinations and tests, grading and promoting pupils, etc. Spring, 10:30; 24 W.

7. School Administration and Supervision. This course is a continuation of course six and makes a study of the following topics: business and educational administration of schools, the school system and the school, the functions of the superintendent and of the principal, the improvement of teachers and teaching, the teachers' meeting, institutes and associations, lesson plans, progress books and reports, the program of studies in elementary and in secondary schools, school government and pupil government, the selection of books and the use of libraries, estimating teaching and the standard of school work, etc. Omitted in 1911-12. Spring, 10:30; 24 W.

8. Foreign School Systems. The purpose of this course is to make a comparative study of the school systems of France and Germany, together with special features of other continental systems. The practical problems will be examined from the standpoint of American education. Omitted in 1911-12.
Winter, hours to be arranged; 24 W.

9. School Systems, British and American. This course deals with the development and present status of education in England, Scotland, Canada, and the United States. The practical workings of the systems will be emphasized.

Winter, hours to be arranged; 24 W.

NOTE: Courses 8 and 9 will not be given unless the number of students desiring them is considered sufficient by the instructor in charge.

10. The Principles and Art of Teaching. The aim of this course is to find a scientific method of learning and teaching and to determine the essential elements of teaching. Students will formulate and discuss lesson plans, do observation work and teach regular classes, observe, so far as conditions will permit, lessons given by regular teachers, and report the same in class. Prerequisites, Education 12 or 17, and Education 4 and 5. Required of all students who are candidates for recommendation for teachers' certificates. See course 16.

Spring, 11:30; 24 W.

11. Criticism and Supervision of Instruction. This course is planned for teachers, supervisors, principals, and superintendents of schools. It will make an intensive study and application of some fundamental principles of education in both method and program of studies. Lessons will be planned and then taught with a class of pupils in the public schools of Morgantown. The lessons thus taught will be discussed in conference. The course will afford an opportunity for observation of lessons, practice teaching, and the supervision of instruction. Prerequisite, Education 10.

Fall and Winter, hour to be arranged; 24 W.

12. Applications of Psychology in Learning and Teaching. This course will present the principles that control rational learning and successful teaching as far as such principles may be derived from psychological laws. A number of psychological topics—the senses, sensation, perception, memory, imagination, reason, association of ideas, apperception, interest and attention, mental development, will, habit, and character—will be studied.

Spring, 8:30; 24 W.

13. Seminar. The curriculum of the elementary school. Omitted in 1911-12.

Winter, 10:00; 24 W.

14. Seminar. High schools and secondary education.

Winter, 10:00; 24 W.

15. Seminar. The rural school—its function, curriculum; state, county, and district supervision. Spring, 2:00; 24 W.

16. Agricultural Education. Nature study and agriculture in the elementary and secondary schools. Organization of programs of studies and the principles and methods of teaching. Observation of elementary and secondary classes in nature study and agriculture. Lectures and recitations, reading of literature, and practical teaching. Candidates for recommendation for a teacher's certificate who are registered in the College of Agriculture must take this course in place of course 10 in their Junior year.

Spring, 11:30; Professor NOLAN, 27 M.

17. Principles of Study. This course aims to present the principles of economic and successful study in such a manner as to aid college students in their studies as well as teachers in directing the study of pupils in school. The function and relation of observing, thinking, reasoning, and memorizing in study will be emphasized. Open only to freshmen and sophomores. Fall, 8:30; 24 W.

ENGLISH

Professor ARMSTRONG, Professor COX, Professor BARBE, Associate Professor NEIL, Associate Professor SMITH and Assistant Professor JOHNSON.

There are three sections in this department: (1) Rhetoric, (2) English Language and Literature, (3) Elocution.

The courses in this department are open to all students who have completed the entrance requirements in English, but there are certain prerequisites for particular courses.

Rhetoric

The chief aim of this division of English is proficiency in English composition, especially composition in prose.

10. Composition and Rhetoric. Three or four themes weekly, conferences, recitations, class criticisms of written exercises, lectures. Required of all candidates for the baccalaureate degrees in arts and sciences. This course is a prerequisite to all other courses in the English department. Fall, 8:30; Professor ARMSTRONG, W.

Fall, 10:30; Spring, 9:30; Professor SMITH, 13 W.

Fall, 11:30; Professor BARBE, L.

11. Composition and Rhetoric. A continuation of course 10, with more attention to rules and principles. Two or three themes a week; study of prose masterpieces as models of style, and as material for themes; conferences, recitations, class criticisms of written exercises, lectures. Required of all candidates for the baccalaureate degrees in arts and sciences. This course is a prerequisite to all other courses in the English department except course 10.

Fall, 11:30; Winter, 11:30; Professor SMITH, 13 W.
Winter, 10:30; Spring, 9:30; Professor JOHNSON, 10 M.
Winter, 9:30; Professor BARBE, L.

20. Rhetoric and Composition. Primarily for students in the College of Engineering. One or two themes a week, two long papers, recitations and lectures, class criticisms of written exercises, individual conferences. Required of all candidates for the B.S.C.E. and B.S.M.E. degrees. Three-fifths or two-fifths credit.

Fall, first section, Monday, Wednesday and Friday; second section, Tuesday and Thursday, 9:30; Professor JOHNSON, 10 M.

21. Rhetoric and Composition. Continuation of course 20. Required of all candidates for the B.S.C.E. and B.S.M.E. degrees. Two-fifths or three-fifths credit.

Winter, first section, Tuesday and Thursday; second section, Monday, Wednesday and Friday, 9:30; Professor JOHNSON, 10 M.

12. Exposition. Study of principles; analysis of masterpieces of exposition, both literary and scientific; themes.

Fall, 10:30; Professor JOHNSON, 10 M

13. Argumentation. A study of general principles and of specimens; outlines and exercises. Required of all who make English their major. Spring, 10:30; Professor SMITH, 13 W.

14. Description and Narration. A study of general principles, with exercises. Winter, 10:30; Professor SMITH, 13 W.
Spring, 10:30; Professor BARBE, L.

15. Themes. An advanced course. Three or four themes are required weekly. Fall, 9:30; Professor BARBE, L.
Winter, 9:30; Professor SMITH, 13 W.
Spring, 10:30; Professor JOHNSON, 10 M.

16. The Essay. Study of the principles underlying the structure of the essay, with constant practice in their application.

Fall, 9:30; Professor SMITH, 13 W.

17. The Short-Story. Study of the short-story as a form of literary expression, with the object of writing original short-stories; constant practice in writing. Professor BARBE, L.

18. Style. A study of the principles and elements of style; practice to develop an artistic sense in the writing of English prose. Spring, 11:30; Professor SMITH, 13 W.

English Language and Literature.

The aims of this division of English are: (a) a scientific knowledge of the origin and development of the English language; (b) a general acquaintance with English literature; (c) a specific knowledge of certain great authors, periods, and movements in English literature.

30. Old English. Bright's Anglo-Saxon Reader; the essentials of Anglo-Saxon grammar; translations. Required of all students who make English their major. Not elective for freshmen. Spring, 8:30; Professor COX, 32 W.

31. Old English. Beowulf. Translation, with due attention to text, metre, literary history, etc. Prerequisite, English 30. Winter, 8:30; Professor COX, 32 W.

32. Early Middle English. Changes in the language. Critical reading of early middle English texts. Prerequisite, English 30. Spring, 8:30; Professor COX, 32 W.

36. General Survey of English Literature. An introduction to the study of literature. This course includes a historical view of the whole field of English literature, and a close, critical study of a few classics from each of the great periods of literary development. Arranged to follow courses 10 and 11; suited to all candidates for baccalaureate degrees, and required of all who make English their major. Spring, 8:30; Professor ARMSTRONG, 31 W.

37. Chaucer. The Canterbury Tales. During the first part of the term the work will be chiefly linguistic, with interpretation of passages. The latter part of the term will be devoted to a somewhat rapid reading, with such consideration of form, sources, etc., as are necessary to a clear understanding of what is read. Required of all students who make English their major. Winter, 9:30; Professor COX, 32 W.

BARBE, L.

39. Shakespeare. The aim of this course is to develop the power to read Shakespeare with intellectual appreciation. Hamlet, Henry IV., Part I., and Henry V. will be studied carefully, with special attention to exact interpretation, and to those peculiarities of language in which Shakespearean usage differs from our own. Required of all students who make English their major.

Fall, 11:30; Professor COX, 32 W.

40. Shakespeare. This course properly follows 39. One play will be studied closely and critically, and a number of others will be read with attention to characters, plot development, and general literary interpretation. Required of all students who make English their major. Winter, 10:30; Professor ARMSTRONG, 31 W.

41. Shakespeare. A continuation of course 40 intended for purposes of general culture. The ten historical plays will be read.

Spring, 10:30; Professor ARMSTRONG, 31 W.

42. Milton. This course will consider Milton's poems and the Areopagitica. Interpretation of passages; consideration of forms, sources, style, etc.; lectures. Winter, 11:30; Professor COX, 32 W.

43. The Elizabethan Period. From Tottel's Miscellany to the death of Spenser (1557-1599). The authors studied are Wyatt, Surrey, Roger Aschman, Lyly, Sidney, Marlowe, and Spenser. Special attention will be given to Spenser. Omitted in 1911-12.

Winter, 11:30; Professor COX, 32 W.

45. English Literature of the Queen Anne Period. The course will deal with those writers who are especially representative of the classical spirit in English literature. The authors studied are Dryden, Swift, Addison, Steele, DeFoe, Pope, and Gay.

Spring, 11:30; Professor COX, 32 W.

46. English Literature. From the death of Swift to the publication of the Lyrical Ballads (1745-1798). The authors studied are Gray, Collins, Johnson, Goldsmith, Cowper, Sheridan, Burke, Burns, and Blake; some attention to lesser authors.

Fall, 9:30; Professor ARMSTRONG, 31 W.

47. English Literature. From the publication of the Lyrical Ballads to the death of Scott (1798-1832). The authors studied are Wordsworth, Byron, Shelley, Keats, and Scott. Omitted in 1911-12.

Spring, 9:30; Professor ARMSTRONG, 31 W.

48. English Literature. From the death of Scott to the death of Tennyson (1832-1892)—the poets. The chief authors studied are Tennyson, Browning, Arnold, Swinburne, Rossetti, and Morris.

Winter, 11:30; Professor BARBE, L.

49. English Literature. Prose writers since 1832. The chief authors studied are Carlyle, Ruskin, Dickens, Thackeray, George Eliot, and Stevenson. Omitted in 1911-12.

Fall, 9:30; Professor ARMSTRONG, 31 W.

50. The English Old Testament. A study of the Old Testament in English as literature; discussion of its literary forms and interpretation of some of its masterpieces.

Winter, 9:30; Professor ARMSTRONG, 31 W.

51. The Short Story. The short story as a form of literature. A study of its development and some of its types from Poe to Kipling. Omitted in 1911-12. Fall, 10:30; Professor ARMSTRONG, 31 W.

52. American Literature. A brief outline of its historical development and a study of selected works of representative authors.

Fall, 8:30; Professor BARBE, L.

53. The Novel. The study in this course will include the historical development of the novel; its significance; relation to modern life; types; tendencies, reading of novels; reports; lectures. Omitted in 1911-12. Spring, 11:30; Professor COX, 32 W.

55. English Literature. Study of an author. The entire production of the most important work of some selected author will be studied to gain a complete view. The author to be studied in 1911-12 is Ralph Waldo Emerson.

Winter, 8:30; Professor ARMSTRONG, 31 W.

56. Lyric Poetry of Tennyson and Browning. Introductory study of the nature and elements of lyric poetry; study of the lyric poems of these two authors with reference to form, thought, imagination, beauty, and emotion.

Fall, 10:30; Professor ARMSTRONG, 31 W.

57. Seminar in English Literature. Current literature as an expression of modern life. The study will deal especially with the novel and the drama; reading, interpretation, and criticism; reports on selected topics; lectures twice a week.

Fall, 11:30; Professor COX, 32 W.

58. Literature in the Grades and the High School. Intended especially for superintendents, principals, and high school teachers. The course deals with the principles of literary criticism; application of tests; story telling, general and special methods of presentation; the tributaries of the literary stream, courses of study; bibliography. Spring, 9:30; Professor COX, 32 W.

59. The English New Testament. A study of the New Testament in English as literature. All the books will be read and a few studied with attention to literary form and interpretation.
Spring, 9:30; Professor ARMSTRONG, 31 W.

60. A Study of Poetry. The essential qualities of poetry, together with the study of a considerable number of great short poems in English and American literature. These poems will be studied with a view to their literary appreciation; the content and meaning, rather than the form, will be given most attention. Omitted in 1911-12.
Winter, 11:30; Professor BARBE, L.

62. Wordsworth. A Study of the poetry of Wordsworth.
Spring, 11:30; Professor BARBE, L.

NOTE:—The instructors in the English department hold themselves ready to assist and advise competent students who may propose plans of special study that meet the approval of the department.

Elocution

NOTE:—The necessity of English literature in connection with the work in elocution cannot be too often impressed. No student will be recommended as a teacher of elocution, or as a public reader, unless he has had, in addition to his courses in elocution, at least six courses in English Literature.

Requirements for Certificates. Students applying for a certificate in elocution must have reached full senior standing in the College of Arts and Sciences of this University, or in some college of equal grade; all class courses in elocution shall have been completed and such private lessons taken as the individual need of the student may have required.

1. Principles of Elocution. A study of vocal organs and muscles; methods of breathing; vocal culture for purity, strength, compass, flexibility, and sustaining power; study and application of vocal elements,—form, degree, stress, quality; first principles of action.
Fall, 2:00; Winter, 2:00; Professor NEIL, 14 M.

2. Principles of Elocution. Vocal culture continued; study and drill in the vocal elements; pitch, degree, change, melody, time, quantity, pause, movement; completion of principles of action; analysis, preparation, and rendition of selections; criticism of application of elements. Spring, 2:00; Winter, 3:30; Professor NEIL, 14 M.

3. Literary Analysis and Rendition. Development of individuality in voice and action; lectures on analysis, mind concentration, memory, scene building, and interpretation; individual study of selections from every style; rendition of prescribed selections and criticism by members of class and instructor.
Spring, 3:30; Professor NEIL, 14 M.

4. History of Oratory. A philosophical survey of the origin and the history of the oration; a study of the leading orators of the various periods; analysis by each student of the noted speeches of different times and countries; class reviews of the style, diction, depth, clearness, climax, and persuasive power of the orators studied.
Fall, 3:30; Professor NEIL, 14 M.

5. Original Orations. Lectures on styles of address, kinds of discourse, construction of speeches, ancient, mediaeval, and modern oratory, and the sources of eloquence; preparation and delivery of topical speeches and original orations.
Winter, 9:30; Professor NEIL, 14 M.

6. Argumentation and Debate. Lectures on extempore speaking, principles of debate, preparation of briefs, arrangement of argument, team work, and rebuttal; extempore speeches and debates required of every student. Fall, 10:30; Professor NEIL, 14 M.

7. Advanced Argumentation and Debate. Continuation of course 6. The object of this course is to give the student a mastery over the perplexing technicalities of argumentative laws, to develop a clear, direct, forceful, and persuasive style of speaking, and to perfect the art of team debating. Winter, 10:30; Professor NEIL, 14 M.

8. Vocal Interpretation of Shakespeare. Lectures on the psychological setting of characters, plot, and purpose of one of Shakespeare's plays; study, interpretation, and memoriter rendition of the same play. Omitted in 1911-12. Spring, 8:30; Professor NEIL, 14 M.

9. Vocal Interpretation of the Bible. The object of this course is to teach the student the literary worth of the Bible, its narrative,

didactic, allegorical, dramatic, oratorical, lyric, and epic spirit. This is accomplished through the vocal rendition of Biblical selections.

Spring, 9:30; Professor NEIL, 14 M.

10. University Debate. This course is required of all students who have been chosen to represent the University in intercollegiate contests in debate. It gives a thorough training in forensic oratory. Omitted in 1911-12.

Winter, hour to be arranged; Professor NEIL, 14 M.

NOTE:—All classes meet three times a week — on Mondays, Wednesdays, and Fridays. In courses 1, 2, 3, and 4, the class period is one and one-half hours. In the other courses the class period is one hour. Sufficient work is required in each course for a full course credit.

Private Lessons

In addition to the class work in elocution, a thorough and comprehensive course of individual instruction is offered. Each lesson occupies a full one-hour period, and is devoted to a single individual. This branch of the work is indispensable to all who wish to follow any line of public speaking. The instruction may be taken either as single lessons or in course of one college term each.

Tuition for Private Lessons

Single Lesson	$ 2.50
Per college term, 1 a week	20.00
Per college term, 2 a week	35.00

All class work in elocution and oratory is free to students enrolled in the University.

ENTOMOLOGY

Credit will be given in the College of Arts and Sciences for one course in Entomology given in the College of Agriculture. See page 178.

FARM MANAGEMENT

Credit will be given in the College of Arts and Sciences for one course in Farm Management given in the College of Agriculture. See page 179.

FINE ARTS

Associate Professor LEONARD

Credit will be given in the College of Arts and Sciences for not more than five courses in fine arts. In case credit is asked for the maximum number of courses, these must include the courses in the history of art.

1. Elementary Drawing. The historic forms of art and their development. Lectures, with collateral reading and practice in drawing. Fall, 9:30; L.

2. Elementary Drawing. A continuation of course 1. Winter, 9:30; L.

3. Elementary Drawing. A continuation of course 2. Spring, 9:30; L.

16. Elementary Drawing. For students in the College of Agriculture only. The study of form, proportion, light and shade, and composition with a view to the development of individual opinion, judgment, and the power of expressing ideas in shapes and forms. An acquaintance with some works of art will be encouraged. Two-fifths credit. Fall, Monday, and Wednesday, 1:30; L.

4. Advanced Drawing. Historic periods of architecture, sculpture, and painting. Lectures, with collateral reading and practice in drawing. Fall, 10:30; L.

5. Advanced Drawing. A continuation of course 4. Winter, 10:30; L.

6. Advanced Drawing. A continuation of course 5. Spring, 10:30; L.

7. The History of Greek Art, with a consideration of the arts of Egypt, Assyria, and Phoenicia, in their relation to Greek art. Fall, 8:30; L.

8. The History of Mediaeval and Modern Art, with special consideration of the Renaissance period. Winter, 8:30; L.

Courses 7 and 8 are not elective for freshmen.

17. Public School Drawing. For teachers who desire to become familiar with the methods and mediums employed in public school work. Spring, 8:30; L.

FORESTRY

Credit will be given in the College of Arts and Sciences for one course in Forestry given in the College of Agriculture. See page 179.

GEOLOGY AND MINERALOGY

Professor BROWN

The equipment for purposes of illustrative teaching in this subject consists of many thousands of fossils, casts, and models, a good collection of minerals, specimens of all the important building stones, and Ward's College Collection in Paleontology, showing the advancement from the early forms of life to those of the present time. The University is situated in the midst of a great coal-producing region, within five miles of the western fold of the Appalachinan mountains, and oil and gas wells are but a short distance away. The natural facilities for the study of geology are unsurpassed.

2. General Geology. A general course in dynamic and structural geology; economic applications of geology will receive special attention; numerous excursions will be made; recitations, lectures, and field work. Prerequisites, Chemistry 1, 2, Physics 2.
Fall, 11:30; Spring, 10:30; 30 S.

3. Paleontology. The progress and development of plants and animals through the different ages of the earth; recitations and lectures. For illustration in this subject the University has an equipment of many thousands of fossils, casts and models. Prerequisites, Zoology 1 and Botany 2 Winter, 8:30; 30 S.

4. Economic Geology. Common rock and vein-forming minerals; physical geography and geology of the United States; the origin of ore deposits; mining terms and methods; metalliferous deposits. Recitation and lectures. Ries' Elements of Economic Geology. Prerequisite, Geology 3. Fall, 10:30; Spring, 11:30; 30 S.

5. Economic Geology. The fuels—coal, oil, and natural gas—soils, clays, fertilizers, precious stones, and building stones. Recitations and lectures. Ries's Elements and Merrill's Stones for Building and Decoration. Winter, 10:30; 30 S.

6. Mineralogy. Crystallography; physical qualities of minerals; description of minerals consisting of basic elements to the silicates;

recitations, lectures, and practical determinations. The University has a good collection of minerals for practical instruction. Moses's Elements of Mineralogy. Fall, 8:30; Spring, 9:30; 30 S.

7. Mineralogy. The silicates and hydrocarbon compounds and their determination. Moses's Elements of Mineralogy.
Winter, 11:30; 30 S.

GERMANIC LANGUAGES AND LITERATURES

Professor TRUSCOTT and Mr. GRAVES

NOTE:—The text-books named in the following courses may be changed at any time, but the grade and character of the work outlined in each will remain the same.

Students taking German as a major will be expected to take as collateral work two courses in Anglo-Saxon and three courses in the history of Germany.

1. Elementary German. The object of the course is to acquaint the student with the elements of the grammar, to give him a reading knowledge of the easiest German prose, and as much practice as possible in pronunciation. Vos' or Thomas' Grammar; Super's German Reader, Part I; Glueck Auf.

Fall, first section, 9:30; Mr. GRAVES; second section, 10:30; Mr. GRAVES. Winter, 11:30; Professor TRUSCOTT, 18 W.

2. Elementary German. A continuation of course 1; reading of easy prose and poetry; several poems will be memorized. Elementary work in composition. Super's Reader; Grimm's Maerchen.

Winter, first section, 9:30; Mr. GRAVES; second section, 10:30; Mr. GRAVES. Spring, 11:30; Professor TRUSCOTT, 18 W.

3. Elementary German. A continuation of course 2; reading, dictation, elementary work in composition, accompanied by a review of the main points of the grammar; Immensee; Hoeher als die Kirche; L'Arrabiata.

Fall, 11:30; Professor TRUSCOTT; spring, first section, 9:30; second section, 10:30; Mr. GRAVES, 19 W.

4. German Prose. Rapid reading of prose by modern authors to familiarize the student with the more general phases of the language. Fall, 8:30; Mr. GRAVES, 19 W.

5. Composition. Translation of English prose into German; discussion of grammatical points in connection with the translation; dictation; study of the irregular verbs. Pope's Prose Comopsition; Jagemann's German Syntax. Winter, 8:30; Mr. GRAVES, 19 W.

6. German Poetry. Translation of one long poem and one drama; reading of many and memorizing of several well-known poems; Hermann and Dorothea; Die Jungfrau von Orleans; Klenze's Deutsche Gedichte. Spring, 8:30; Mr. GRAVES, 19 W.

7. Advanced Prose. Reading of descriptive and narrative prose. Selections from the works of Ludwig, Storm, Keller, Meyer, and Sudermann. Fall, 8:30; Professor TRUSCOTT, 18 W.

8. Advanced Composition. Dictation, oral practice based on Bronson's Colloquial German; Jagemann's Prose Composition. Winter, 8:30; Professor TRUSCOTT, 18 W.

9. Heine. Study of his life; reading from his prose and poetry; Reisbilder; Die romantische Schule; Das Buch der Lieder. Spring, 8:30; Professor TRUSCOTT, 18 W.

10. Lessing. Biography by Rolleston. The following plays will be read: Miss Sara Sampson, Minna von Barnhelm, Emilia Galotti, Nathan der Weise. Laocoon. Lectures. Fall, 9:30; Professor TRUSCOTT, 18 W.

11. Goethe. Study of his life; reading of Werther's Leiden; Iphigenie auf Taurus or Tasso; Faust, Part I. Winter, 9:30; Professor TRUSCOTT, 18 W.

12. Schiller. Biography by Sime; reading of Don Carlos; Wallenstein; Wilhelm Tell. Spring, 9:30; Professor TRUSCOTT, 18 W.

13. History of German Literature. From early times to 1500. This course is a study of the history of the literature, its beginnings and development, and lays stress upon the most important authors and the chief epochs. Reading and discussion of representative works. Selections from Das Nibelungenlied, das Gudrunslied, and the works of Hartman von Aue, Wolfram von Eschenbach, Gottfried von Strassburg, and Walther von der Vogelweide. Kluge's History of German Literature. Practice in writing German. Three meetings of class each week. Omitted in 1911-12. Fall, 10:30; Professor TRUSCOTT, 18 W.

14. History of German Literature. From 1500 to 1800. Continuation of course 13. Selections from the works of Luther, Klopstock, Wieland, and Herder. Lessing, Goethe, and Schiller not considered. Kluge's History of German Literature. Practice in writing German. Three meetings of class each week. Omitted in 1911-12.

Winter, 10:30; Professor TRUSCOTT, 18 W.

15. History of German Literature. From 1800 to 1900. Continuation of course 14. Selections from the works of Kleist, Grillparzer, Uhland, Hebbel, Ludwig, Keller, Meyer, Freytag, Wildenbruch, Sudermann, and Hauptmann. Heine not considered. Meyer's Geschichte der deutschen Litteratur im neunzehnten Jahrhundert. Practice in writing German. Three meetings of class each week. Omitted in 1911-12. Spring, 10:30; Professor TRUSCOTT, 18 W.

16. Scientific German. Intended for students in the scientific courses who have had at least a year of elementary German. The purpose is to teach the students to read at sight scientific articles in German. Hodge's German Science Reader; Cohn's Ueber Bakterien. Omitted in 1911-12. Winter, 11:30; Mr. GRAVES, 19 W.

17. Journalistic German. Newspaper and magazine articles on various subjects. Prehn's Journalistic German; Lodemann's Germany of the Germans; New Yorker Staatszeitung. Omitted in 1911-12.

Spring, 11:30; Mr. GRAVES, 19 W.

18. Historical German. A reading course in historical prose. Subjects taken from the political and literary history of Germany. Schrakamp's Ezaehlungen aus der deutschen Geschichte; Kostyak's Deutschland und die Deutschen; Schoenfeld's German Historical Prose; Freytag's Karl der Grosse. Prerequisite, three courses of German. Winter, 11:30; Mr. GRAVES, 19 W.

19. German Comedies. Three popular comedies will be studied: Lessing's Minna von Barnhelm; Gutzkow's Zopf und Schwert; Freytag's Die Journalisten. Composition once a week throughout the course. Prerequisite, four courses of German.

Spring, 11:30; Mr. GRAVES, 19 W.

20. Middle High German. Omitted 1911-12.

Professor TRUSCOTT, 18 W.

GREEK LANGUAGE AND LITERATURE

Professor GREEN and Miss BUCHANAN

1. White's First Greek Book (Chapters I-XL). This course is for beginners. The work covers pronunciation, accent, declensions and conjugations, etymology of words, and simple translations from

Greek into English and from English into Greek to illustrate the principles of grammar as given in the text.

Fall, 9:30; Miss BUCHANAN, 11 M.

2. White's First Greek Book (Complete). A continuation of course 1; much attention is paid to the vocabulary; daily exercises in sight reading. The first book of the Anabasis is read in connection with course 1 and 2. Prerequisite, Greek 1.

Winter, 9:30; Miss BUCHANAN, 11 M.

3. Xenophon's Anabasis (Books II., III., and IV.). Prose composition; a fuller knowledge of the grammar. Prerequisite, Greek 1 and 2. Goodwin's Xenophon's Anabasis; Goodwin's Greek Grammar; Pearson's Greek Prose Composition.

Spring, 9:30; Miss BUCHANAN, 11 M.

4. Select Readings. Selections from the works of Xenophon and Herodotus; continued sight reading; review of Greek accidence and further study of syntax.

Fall, 10:30; Professor GREEN or Miss BUCHANAN, 11 M.

5. Lysias' Orations. Given alternately with Greek 7. A study of the form of Greek orations and Lysias's style; collateral library work assigned to each student; sight reading. Prerequisites, Greek 1, 2, 3, and 4, or their equivalent.

Winter, 10:30; Professor GREEN or Miss BUCHANAN, 11 M.

6. Homer's Iliad or Odyssey (Books I., II., and III.) and Homeric Verse. All the text is read metrically. Etymology, mythology, and prosody are studied in connection with the text. Seymour's Iliad. Collateral reading; Jebb's Introduction to Homer; Gladstone's Time and Place of Homer. Prerequisites, Greek 1, 2, 3, 4, 5.

Spring, 10:30; Professor GREEN or Miss BUCHANAN, 11 M.

7. Lucian's Shorter Dialogues. Given alternately with Greek 5. The Dialogues of the Dead and other short dialogues are read. Selections from Lucian by Williams. Omitted in 1911-12.

Winter, 10:30; Professor GREEN or Miss BUCHANAN, 11 M.

8. Æschines Against Ctesiphon. The aggressions of Philip of Macedon; the political institutions of Greece and the constitution of Athens are studied in connection with the text. Æschines against Ctesiphon, by Richardson. Fall, 9:30; Professor GREEN, 30 L.

9. Plato's Apology and Crito. A study of Athenian methods of legal procedure accompanies the reading of the Apology. Dyer's Apology and Crito. Fall, 11:30; Professor GREEN, 30 L.

10. Greek Literature in English Translation. The development of artistic forms of literary expressions among the Greeks. Some of the masterpieces of Greek literature are read in standard English translations. Written reports upon assigned readings. This course is intended for mature students of considerable experience in the study of language and literature, but no knowledge of the Greek language is required. Capps' Homer to Theocritus. Collateral reading; Jebb's Greek Literature, Mahaffey's History of Greek Literature. Fall, 8:30; Professor GREEN, 30 L.

11. Greek Literature in English Translation. A continuation of course 10, but deals especially with the drama and the development of literary prose. Winter, 8:30; Professor GREEN, 30 L.

12. Myths and Legends. A study of those myths and legends upon which a large number of ancient and modern classics are based and to which frequent reference is made in English literature. No knowledge of the Greek language is necessary. Prerequisite for major credit, Greek 5 or 7. Guerber's Myths of Greece and Rome. Spring, 8:30; Professor GREEN, 30 L.

13. Aristophanes. Omitted 1910-11. The reading of one or more plays will be supplemented by lectures on the development of Greek comedy, and the influence of the comic drama upon social and political life at Athens. Winter, 11:30; Professor GREEN, 30 L.

14. Euripides. Omitted 1911-12. One or more of the tragedies will be translated in class. Other plays by the same author will be read before the class by the instructor or studied by members of the class with the aid of standard translations. Incidental study of Greek metric. Fall, hour to be arranged; Professor GREEN, 30 L.

15. Demosthenes on the Crown. Stress is laid on correct use of synonyms, Greek rhetoric, and oratory; frequent sight translations. Demosthenes on the Crown, by Goodwin. Winter, 9:30; Professor GREEN, 30 L.

16. Æschylus' Prometheus Bound. History of the development of dramatic art among the Greeks; study of the adaptation of epic and lyric material to the purpose of the drama; much attention is given to the metrical system of the lyric passages. Allen's Prometheus Bound of Æschylus. Winter, 11:30; Professor GREEN, 30 L.

17. Sophocles. The reading of one or more of the plays; study of the Greek trilogy; lectures on the Greek theatre. D'Ooge's Antigone of Sophocles. Spring, 9:30; Professor Green, 30 L.

18. New Testament Greek. A comparative study of the synoptic gospels. In the translation, pure, idiomatic English of the twentieth century is required. Westcott and Hort.
Spring, 11:30; Professor Green, 30 L.

HISTORY AND POLITICAL SCIENCE

Professor Callahan and Professor Chitwood

The work offered in this department includes: (1) Continental European History, (2) English History, (3) American History, and (4) Political Science.

Instruction is given by lectures, text-book work, assigned collateral readings; preparation of papers, syllabi, and maps; special reports, recitations, and informal conferences.

Students are encouraged to observe and to read contemporary history and politics.

An association of those who are especially interested in the work of the department meets fortnightly for part of the year to hear the discussion of special topics and current problems.

An afternoon hour is designated for conferences and for direction of library work.

Continental European History

Professor Chitwood

Students who select continental European history as their principal study are advised to take at least one year in French, or German, in the early part of the University course.

Among the books of reference, which every student will often need to consult, are Ploetz's Epitome of Universal History and some good historical atlas, such as Putzger's Historischer Schul-Atlas.

7. Essentials of History: Orient, Greece, and Rome. For conditioned freshmen who have had inadequate preparation in history and for other students who need a survey of the general field of history, emphasizing the epochal events. Fall, 11:30; 29 W.

8. Essentials of History: Mediaeval and Modern Ages. Purpose and method as in course 7. Winter, 11:30; 29 W.

9. History of Oriental Civilization. This is a general culture course, and a fitting introduction to the study of history. It begins with a survey of primitive society and traces the rise and development of human institutions. It directs especial attention to the early institutional history of China, Japan, India, Chaldea, Assyria, and Egypt, gives a survey of their contributions to civilization, and traces the development and influence of contact with the civilization of the west. Fall, 8:30; 29 W.

10. History of Greece. In this course the central idea is the development of civilized life as expressed in art, literature, and philosophy, in personal character and social customs, as well as in political ideas and institutions. An attempt will be made to gain an appreciation of what the Greeks were and what they gave to civilization. Winter, 8:30; 29 W.

11. History of Rome. A sketch of the Roman Republic with special reference to the expansion of the Roman power and an intensive study of the empire. The aim in this course is to trace the development of Roman institutions, character, and civilization, to explain the genius of the Roman people for organization and government, and to call attention to the contributions of Rome to modern civilization. Spring, 8:30; 29 W.

12. Mediaeval History. This course begins with the period of institutional chaos following the breakup of the Roman empire, and ends with the rise of modern states. Special attention is devoted to the three prime factors in the history of the middle ages,—the surviving civilization of Rome, the Christian church, and the German people. Political history, except in the case of France, is subordinated to the study of social and economic institutions—the church, feudalism, the crusades, schools and learning, commerce, and the rise of cities. Fall, 10:30; 29 W.

13. The Renaissance and the Reformation; 1300-1648. A transition from mediaeval to modern history. The development of the forces of modern civilization. Beginning with the survey of the economic, political, and intellectual conditions at the close of the middle ages, this course gives the student general knowledge of the rise and decline of the papal hierarchy, the renaissance in Italy and Germany, the protestant revolution in the principal European states, the counter-reformation, and the religious wars to the Treaty of Westphalia. Winter, 10:30; 29 W.

14. Continental European History since 1648. This course covers the rise of Prussia, the period of French ascendency, the revolutionary and Napoleonic eras, the period of reaction, the unification of Germany and Italy, and the progress of democracy in the nineteenth century. Spring, 10:30; 29 W.

15. Continental Europe in the Nineteenth Century. This course is devoted to an intensive study of political and social conditions in the more important states of Europe during the last hundred years. Somewhat extended reading is required of students taking this course, and the results of this reading is presented in the form of papers and reports. Spring, 11:30; 29 W.

16. Seminar in European History. For advanced history students only. Hours to be arranged; 29 W.

English History

Professor Callahan

Students will find it convenient to own Low and Pulling's Dictionary of English History and Gardiner's Atlas.

Courses 17 and 18 or 19 and 20 furnish a good foundation for the study of American history and law.

17. History of England to the Tudors. A course in the general and institutional history of England. Special attention is given to political, economic, and social life and development; the more important subjects in constitutional history are considered, showing how England learned to govern herself. Fall, 10:30; 30 W.

18. History of England from the Tudors to the Present Time. A continuation of course 17. The upbuilding of the British Empire and adjustment to new conditions. The constitutional and religious struggles of the sixteenth and seventeenth centuries; economic and social changes; international relations; development of a sea power; struggle for colonial and commercial supremacy; and the formation of modern conditions and institutions. Winter, 10:30; 30 W.

19. English Social and Industrial History. A survey of the facts of social and industrial evolution and their relation to political history and the interpretation of present conditions; a study of the enlargement of English life and the growth of English institutions. Omitted in 1911-12. Spring, 10:30; 30 W.

20. English Historical and Practical Politics: English Constitutional Law and History. A seminar course arranged especially for advanced students in history who desire a suitable preparation for courses in American government and law. Prerequisite, a general outline knowledge of English history and course 17, 18 or 19.

Spring, 10:30; 30 W.

American History

Professor CALLAHAN

All students of American history should have Channing and Hart's Guide, and McCoun's Historical Geography of the United States.

21. American Colonial History (1492-1776). European background; economic and political conditions in Europe before the search for new trade routes; evolution of discovery and settlement; Spanish colonial problems, policy, and progress; growth of the English settlements into colonies; origin and development of American institutions; views of colonial, social, and economic life; French colonial policy; the conflict between the English and new France; relation of the colonies to England; adaptation of European civilization to American conditions; the separation of the colonies from England.

Fall, 9:30; 30 W.

22. The Formation of the Union: American Political History (1776-1829). The revolution, the critical period, the formation of the constitution, the organization of the government, the struggle for neutrality and the development of nationality, the expansion of the Union, and the triumph of democracy. Special attention is given to political and constitutional development and to international relations, but industrial and social growth is also treated.

Winter, 9:30; 30 W.

23. Division and Reunion: American Political History Since 1829. Economic questions and the slavery contest; the growth of sectional differences, culminating in the secession movement; the Civil War and its problems, the overthrow of the slave power, and readjustment; a brief survey of the political and social questions since the Civil War, and of the development of the resources of the country.

Spring, 9:30; 30 W.

In courses 21, 22, and 23, while special emphasis is laid on political and constitutional history, much attention is given to social and economic conditions.

26. History of American Diplomacy and Foreign Policy (1776-1909). A general survey of the negotiations, treaties, arbitrations, congresses, etc., to which the United States has been a party; the fundamental principles of American policy; a study of the most important phases of American international relations; America's influence on international law and diplomacy; the state department and its most distinguished secretaries. Winter, 8:30; 30 W.

29. American Social and Economic History. The story of the economic achievements of the American people. A historical basis that is essential to the proper study of economics. Beginning with the exploration and settlement that led to colonization, the student traces the growth and expansion of manufactures, agriculture, commerce, transportation, population, and labor from the simple agricultural communities of the colonies to the complex industrial and commercial organization of to-day. He learns how to acquire the information which is a necessary preliminary for the solution of present day industrial, financial, and commercial problems.

Spring, 11:30; 30 W

32. History of West Virginia. Co-operative investigations in social, economic, political and constitutional development; state legislation is studied as far as possible from documentary material; considerable attention is given to railroad development and the growth of towns; an effort is made to collect historical material from different parts of the state. A seminar course. Omitted in 1911-12.

Fall, 8:30; 30 W. and Library

34. Seminar in American History. A research course supplemented by lectures. Exclusively for students taking history as their major. Among the subjects recently studied were the Monroe doctrine, relations of the United States with Spanish America, and the American Cuban policy. Students are required to take notes, to investigate assigned topics, and to become acquainted with the original materials that are accessible. Proper attention is given to scientific methods of historical research, construction, and interpretation. Theses in American history are prepared in connection with this work. Fall, 11:30; Library.

The attention of students taking American History is invited to the announcements of the Bryan prize and the Tax Commission Prize on page 49.

Political Science

In all these courses, students should have a clear knowledge of the outlines of general history and especially of modern political history.

35. American Practical Politics: The Government at Work. A practical study of the actual workings of the government and politics of the United States, both state and national; the growth, spirit, machinery, operations, and functions of the government; the relations, rights and duties of citizens; the policies of state on public questions and problems. Special attention is given to the realities of governments and institutions, and to the personal interest and personal action which underlie constitutions and statutes.

Open to students who have a familiar knowledge of the period covered by courses 22 and 23. Omitted 1911-12.

Winter, 11:30; Professor CALLAHAN, 30 W.

36. European Historical and Practical Politics. A historical study of the development of the political institutions, constitutional governments, and parties of Continental Europe; a comparative study of Greek, Roman, and Teutonic polity, and of the governments and parties of the leading countries of modern Europe. Special attention is given to recent European politics. Open to advanced students who have had thorough courses in European history, especially course 14. Spring, 8:30; Professor CHITWOOD, 29 W.

40. Municipal Government. Omitted 1911-12.

Professor CALLAHAN, 30 W.

42. Anglo-American Historical Jurisprudence. A study of the sources and growth of law and the development of legal institutions in connection with social and political history. Adapted especially to advanced students of history who are preparing for the study of law. Omitted in 1911-12. Fall, 8:30; Professor CALLAHAN, 30 W.

43. International Law and Practice of Diplomacy. Open to students with a knowledge of modern history, especially courses 22 and 23. Spring, 8:30; Professor CALLAHAN, 30 W.

HORTICULTURE

Credit will be given in the College of Arts and Sciences for two courses in this subject given in the College of Agriculture. See page 180.

LATIN LANGUAGE AND LITERATURE

Professor F. B. TROTTER and Professor HARE

The courses in this department are arranged by subjects and are not intended to be taken consecutively. Courses 6, 7, 8, and 9 may be counted as either preparatory or college work, but are prerequisite to the following courses. Courses 10, 11, and 17 are required of candidates for the A.B. degree unless they elect Greek. In addition to these, courses 12, 13, 19, and 34 are required of all students who make Latin their major. After the completion of these courses, such other courses will be open to students as, in the opinion of the instructors, they are qualified to enter. Students making Latin their major are required to take as collateral work History 10 and 11. (See page 92).

6. Cicero's Orations against Catiline, I., II., and III.
Fall, 8:30; Spring, 10:30; Professor HARE, 12 W.

7. Cicero's Fourth Oration against Catiline, the Oration for Archias, and the Aeneid of Virgil (Book 1).
Fall, 9:30; Winter, 8:30; Professor HARE, 12 W.

8. Virgil's Aeneid. (Books II., III., and IV.).
Winter, 9:30; Spring, 8:30; Professor HARE, 12 W.

9. Virgil's Aeneid (Books IV., V., and VI.).
Spring, 9:30; Professor HARE, 12 W.

Latin Composition is required once a week in courses 7, 8, and 9.

10. Cicero's De Amicitia and De Senectute, with study of synonyms. Fall, 9:30; Professor TROTTER, 21 W.

11. Horace's Odes and Epodes, with scanning.
Spring, 9:30; Professor TROTTER, 21 W.

12. Horace's Satires and Epistles, with scanning.
Spring, 8:30; Professor TROTTER, 21 W.

13. Cicero's De Officiis or Tusculan Disputations, with study of synonyms. Co-ordinate with course 5 in Philosophy.
Fall, 8:30; Professor TROTTER, 21 W.

14. Seneca's Moral Essays, with a study of his times. Co-ordinate with course 5 in Philosophy.
Hour to be arranged; Professor TROTTER, 21 W.

15. Lucretius' De Rerum Natura, with a study of his doctrines.
Hour to be arranged; Professor TROTTER, 21 W.

16. Cicero's Letters, with a study of the great orator's times.
Hour to be arranged; Professor TROTTER, 21 W.

17. Livy, Books XXI. and XXII., with a study of Roman history, or, if thought advisable, Sallust and other selections from history. Co-ordinate with course 11 in History.
Winter, 9:30; Professor TROTTER, 21 W.

18. Tacitus' Germania, Dialogues and Agricola, or Historae or Annales, with a study of the early Empire.
Winter, 11:30; Professor TROTTER, 21 W.

19. Plautus' Captivi, Trinummus, and Rudens, with a study of the Roman stage. Winter, 8:30; Professor TROTTER, 21 W.

20. Terence's Adelphoe, Phormio and Heauton Timoreumenos, with study of Greek and Roman drama.
Spring, 10:30; Professor TROTTER, 21 W.

21. Seneca's Medea, Hercules Furens, and Oedipus, with study of tragedy. Spring, 11:30; Professor TROTTER, 21 W.

23. Juvenal's Satires, with a study of contemporaneous history.
Fall, 11:30; Professor TROTTER, 21 W.

31. Cicero's De Oratore or Brutus.
Fall, 10:30; Professor TROTTER, 21 W.

32. Quintilian's Institutions, Books X. and XII.
Hours to be arranged; Professor TROTTER, 21 W.

34. Latin Composition. Gildersleeve & Lodge's Latin Writer or an equivalent text is used. Careful study and review of grammar. Winter, 10:30; Professor TROTTER, 21 W.

NOTE:—All the above college courses will be offered for students properly qualified, but not more than fourteen in any one year.

LAW

Credit will be given in the College of Arts and Sciences for five courses in this subject given in the College of Law. See page 186.

MATHEMATICS

Professor EIESLAND, Miss BUCHANAN, Mr. FOULK

7. Solid Geometry.
Fall, 11:30; Spring, 9:30; Mr. FOULK, 7 M.

8. Advanced Algebra.
Fall, 10:30; Winter, 11:30; Professor EIESLAND and Miss BUCHANAN; 14 W., 11 M.

9. Plane and Spherical Trigonometry.
Winter, 10:30; Professor EIESLAND, 14 W.; Spring, 11:03; Miss BUCHANAN, 11 M.

11. Plane Analytical Geomtry. This course includes elementary work in curve tracing. Prerequisite, course 8. (Bailey & Woods).
Spring, 10:30; Fall, 9:30; Professor EIESLAND, 14 W.

12. Analytic Geometry of Space. Quadric surfaces. (Salmon). The course includes some work in determinants.
Winter, 2:00; Professor EIESLAND, 14 W.

15. Differential and Integral Calculus. (Townsend).
Fall, 8:30; Winter, 11:30; Professor EIESLAND, 14 W.

16. Differential and Integral Calculus. This course is a continuation of course 15. (Townsend).
Winter, 8:30; Spring, 11:30; Professor EIESLAND, 14 W.

18. Differential Equations. Total and partial differential equations with applications to physics and mechanics. (Cohen). Prerequisite, courses 15 and 16.
Fall and Spring, 2:00; Professor EIESLAND, 14 W.

The following courses have been given during the last few years and are offered at hours to be arranged. Only one course will be given in any one year.

22. A Course in Analysis, based on Goursat.

23. Theory of Attraction and Fourier's Series.

24. Modern Projective Geometry.

Astronomy

1. Descriptive Astronomy. Practice with sextant and portable transit instrument. Prerequisite, Mathematics 9.

Winter, 9:30; Professor EIESLAND, 14 W.

MECHANICAL ENGINEERING

Credit will be given in the College of Arts and Sciences for certain courses in this subject given in the College of Engineering. See page 146.

MECHANICS AND APPLIED MATHEMATICS

Credit will be given in the College of Arts and Sciences for certain courses in this subject given in the College of Engineering. See page 146.

MUSIC

Miss HAYES

NOTE:—Any seven of the following courses may be offered for credit in the College of Arts and Sciences.

1. Harmony. This course is designed to be a part of the general musical education of all students in the School of Music. It is of special assistance in the study of the piano, but is of value in every department of musical work. One-third credit.

2. Harmony. Continuation of course 1. One-third credit.

3. Harmony. Continuation of course 2. One-third credit.

4. Counterpoint. Prerequisite, courses 1, 2, and 3 in harmony. One-third credit.

5. Counterpoint. Continuation of course 4. One-third credit.

6. Analysis. One-third credit.

7. History of Music. Classic music. One-third credit.

8. History of Music. Romantic music. Continuation of course 4. One-third credit.

9. History of Music. Modern music. Continuation of course 5. One-third credit.

PHILOSOPHY

Professor PURINTON

1. Logic and Principles of Science. A study of the processes of conception, judgment, and reasoning; nature and laws of experience, induction, and subsidiary processes, such as observation, experiment, classification and hypothesis; inductive methods; imperfect inductions and fallacies; elements of deduction and formal logic. Recitations, lectures, and notes by the instructor, and references to standard authorities. Fall, 10:30; 17 W.

2. Psychology. An introductory course devoted to the study of the states of consciousness and mental processes, with an outline of the structure and functions of the nervous system; the principles and methods of mental training and the application of psychology to education. Lectures and text-book work with experiments and seminar work in standard authors. Winter, 10:30; 17 W.

3. Ethics. A survey of the mental processes that control conduct; fundamentals of morality, the moral faculty, ground of obligation, moral standard, moral law, moral sanction; moral culture; practical morality; personal and social duties; a review of historical ethics. Lectures, with reference to standard text-books.
Spring, 10:30; 17 W.

4. Christian Evidence. An outline of the historical and moral proofs concerning the Christian system; a brief comparative view of other religious sytems. Spring, 8:30; President PURINTON, 17 W.

5. History of Philosophy. An introduction to the study of philosophy, with an outline of the history of the leading philosophers and schools, ancient, mediaeval, and modern. Lectures, with references to best standard works. Fall, 9:30; 17 W.

6. Mediaeval and Modern Philosophy. Especially the influence of Christianity upon philosophy and vice versa, and the rise and content of patristic philosophy. Winter, 9:30; 17 W.

7. Problems in Philosophy. The purpose of this course is to examine with some care the leading schools of philosophy with special reference to the psychological and ethical problems involved in each. Idealism, materialism, monism, pantheism, positivism and pragmatism are considered and cognate theories presented. Lectures, with reference to standard texts. Spring, 9:30; 17 W.

PHYSICAL TRAINING

Director CHEZ and Mrs. CHEZ

The purpose of the physical department is the development or restoration of the physical well-being of students attending the University. The director examines each student and prescribes exercises for his individual need. Special attention is given to those who are constitutionally weak.

The work is graded as much as possible to suit the needs of the students. Careful attention is given to correction of bad postural habits and to all-around development and training of the body.

An exhibition of class and apparatus work is given each year.

NOTE:—The courses in physical training can not be counted for credit toward any University degree.

Men's Department

Director CHEZ

1. Track Athletics. Theory and Practice. Technique of track and field athletics. Systematic preparation for indoor and outdoor events. Fall, 11:30; Gymnasium.

2. Gymnastics. Light gymnastics; free hand body building work; chest weights. Heavy gymnastics; elementary exercises on parallel bars; ladders; side and long horse; buck-vaulting and horizontal bar; and tumbling. Indoor games and contests.
Fall, 4:00; Gymnasium.

3. Leaders' Class. Advanced gymnastics; methods in teaching;

terminology. Kinesiology of gymnastic movements; Swedish and German methods. Fall, Wednesday, 6:30 p. m.; Gymnasium.

4. Practical Hygiene. Value of exercise. Food; water; ventilation; dress; stimulants; narcotics. Personal purity.
Fall, Wednesday, 3:00; Gymnasium.

5. Anthropometry. Measurements; their statistical and diagnostic value. Practice in taking and recording measurements and making charts. Arranging work to suit individual cases.
Winter, Monday and Wednesday, 11:30; Gymnasium.

6. General Athletic Training. Theory of training for all branches of athletics. Modern methods. Diet, sleep, and bathing.
Winter, Tuesday, Thursday, Friday, 11:30; Gymnasium.

7. Gymnastics. Continuation of course 2. Light gymnastics; dumbbells; wands; Indian clubs. Heavy gymnastics; more advanced work on all the heavy apparatus. Indoor games and contests.
Winter, 4:00; Gymnasium.

8. Leaders' Class. Continuation of course 3. Advanced gymnastics, specially adapted for teachers in high schools.
Winter, 3:00; Gymnasium.

9. Practical Hygiene. Continuation of course 4.
Winter, Wednesday, 2:00; Gymnasium.

10. Track Athletics. Theory and Practice. Track and field athletics; tennis; outdoor sports. Spring, 11:30; Athletic Field.

11. Gymnastics and Athletics. Light gymnastics; recreational exercises; playground drills; outdoor gymnastic games and contests.
Spring, 4:00; Gymnasium.

12. Construction and Equipment. Gymnasium; athletic fields; playgrounds; organizing the department. specially adapted for public and high school teachers. Spring, 3:00; Gymnasium.

Women's Department

MRS. CHEZ

First Year

13. Light Gymnastics. Swedish gymnastics. Correction of bad

postural habits. Chest weights. Stall bars. Elementary gymnastic dancing. Gymnastic games.

Second half of fall quarter; Monday, Tuesday and Thursday, 4:00; Gymnasium.

16. Light Gymnastics. A continuation of course 13.
Winter, Tuesday and Thursday, 4:00; Gymnasium.

19. Light Gymnastics. A continuation of course 16.
First half of spring quarter, Monday, Tuesday, and Thursday, 4:00; Gymnasium.

15. Athletics. Tennis, field hockey, volley ball, tether ball. Athletic games and sports.
First half of fall quarter, 3:30; Gymnasium.

21. Athletics. A continuation of course 15.
Second half of spring quarter, 3:30; Gymnasium.

17. Indoor Athletics. Indoor baseball, tennis, basketball, tether ball, quoits. Winter, Monday, 2:00; Gymnasium.

14. Personal Hygiene. Lectures on bathing, exercise, diet, ventilation, clothing, care of body. Fall, Wednesday, 4:00; Office.

18. Elementary Anatomy. A study of the bones and muscles.
Winter, Wednesday, 4:00; Office.

20. Pelvic Anatomy. A course of special lectures to women.
Spring, Wednesday, 4:00; Office.

Second Year

22. Light Gymnastics. German gymnastics. Indian clubs, wands, dumbbells, etc. Military and stage marching. Gymnastic games. Folk and artistic dancing.

Second half of fall quarter, Monday, Tuesday, and Thursday, 3:00; Gymnasium.

25. Light Gymnastics. A continuation of course 22.
Winter, Tuesday and Thursday, 3:00; Gymnasium.

28. Light Gymnastics. A continuation of course 25.
First half of spring quarter, Monday, Tuesday, and Thursday, 3:00; Gymnasium.

24. Athletics. A continuation of course 21.
First half of fall quarter, 2:00; Gymnasium.

30. Athletics. A continuation of course 24.
Second half of spring quarter, 2:00; Gymnasium.

27. Indoor Athletics. A continuation of course 17.
Winter, Monday, 3:00; Gymnasium.

23. Applied Anatomy. Lectures. Relation of muscles to common gymnastics and athletic movements.
Fall, Wednesday, 3:00; Office.

26. First Aid. Lectures on first aid treatment in case of accidents, such as cuts, fractures, dislocations, hemorrhages, poisoning, drowning. Winter, Wednesday, 3:00; Office.

29. First Aid. A continuation of course 26. Instruction in bandaging, use of antiseptics, dressing wounds. Demonstrations and recitations. Spring, Wednesday, 3:00; Office.

PHYSICS

Professor WAGGONER and Mr. MOON

The various courses offered in physics are designed to meet the needs of the students in the Colleges of Arts and Sciences, Agriculture, and Engineering. For students who expect to teach physics the laboratory offers unusual facilities for individual laboratory work and the construction of apparatus. The department is provided with lecture rooms, general physical laboratories, optical and photometer rooms and electrical testing and standardizing rooms. The University Library has on file the current numbers of most of the standard journals of physics.

1. Introductory Physics. Open to all students in the University who have not offered physics for entrance. The course consists of lecture demonstrations, quizzes and individual laboratory work. The aim is to present the fundamental principles of physics and their applications to every day life. Prerequisite, plane geometry.

Fall, lecture demonstrations, Monday and Wednesday, 8:30; Professor WAGGONER, 11 S. Quizzes, Thursday and Friday, 8:30; Mr. MOON, 2 S. Laboratory, Monday or Thursday, 1:30 to 3:30; Mr. MOON, 14 S.

2. Introductory Physics. A continuation of course 1.
Winter, hours as in course 1.

3. Introductory Physics. A continuation of course 1 and 2.
Spring, hours as in course 1 and 2.

4. Experimental Physics. A laboratory course exclusively, consisting of a graded series of quantitative experiments to suit the individual needs of the student. Prerequisites, Physics 1, 2, and 3, or equivalent work, and plane trigonometry. Given in fall, winter, and spring quarters, one-third course each quarter, or full course in fall or spring. Hours to be arranged; Mr. MOON, 14 S.

6. General Physics. Lectures and recitations based on Duff's Physics. Required of all candidates for engineering degrees. Prerequisite, analytical geometry.

Fall, Monday, Wednesday, Thursday, and Friday, 9:30; Professor WAGGONER, 11 S.

Laboratory, one period a week of two hours. Tuesday, 9:30, and 1:30; Professor WAGGONER and Mr. MOON; 12 S.

7. General Physics. A continuation of course 6.
Winter, hours as in course 6.

8. General Physics. A continuation of courses 6 and 7.
Spring, hours as in course 6.

11. Advanced Electricity. Required for the degree of B.S.M.E. Fundamental principles, complex quantities, harmonic functions, laws of magnetic and electrical circuits, including graphical and analytical treatment of resistance, inductance, capacity and the theory of electrical measurements. Prerequisites, Physics 6, 7 and 8, and integral calculus. Three-fifths course.

Winter, Monday, Wednesday and Friday, 10:30; Laboratory hours to be arranged; Professor WAGGONER, 11 S.

12. Advanced Electricity. A continuation of Physics 11, which is a prerequisite.

Spring, 10:30; Laboratory hours to be arranged; Professor WAGGONER, 11 S.

14. Applied Electricity. Required for the degree of B.S.C.E. The application of electricity for power, lighting and manufacturing processes, also an elementary discussion of generators and electrical

transmission. Prerequisites, Physics 6, 7, and 8, and integral calculus.
Winter, 11:30; Laboratory hours to be arranged; Mr. MOON, 11 S.

16. Advanced Physical Laboratory. Precise measurements in physics. A laboratory course open to students who have completed Physics 6, 7 and 8, and integral calculus.
Hours to be arranged; Professor WAGGONER, 11 S.

18. Heat. Lectures and laboratory; based on Edser's "Heat for Advanced Students." The laboratory consists of the critical study of thermometers and pyrometers, their construction, calibration and use in high temperature measurements, electric furnace construction, quantitative determination of the various heat quantities and the melting and boiling points of various metals and fluids. Prerequisites, Physics 6, 7, and 8, and integral calculus. Omitted in 1911-12.
Fall, Monday, Wednesday, and Friday, 10:30; laboratory, Thursday, 1:30 to 4:30; Professor WAGGONER, 11 S.

19. Heat. A continuation of course 18. Omitted in 1911-12.
Winter, hours to be arranged.

20. Heat. A continuation of courses 18 and 19. Omitted in 1911-12.
Spring, hours to be arranged.

22. Light. Lectures and laboratory based on Edser's "Light." The laboratory work consists of the study of various optical lens systems, spectrum analysis, the use of the polariscope and the methods of artificial illumination. Prerequisites, Physics 6, 7, and 8, and integral calculus.
Fall, Monday, Wednesday, and Friday, 10:30; Laboratory, Thursday, 1:30 to 4:30; Professor WAGGONER, 11 S.

23. Light. A continuation of course 22.
Winter, hours to be arranged.

24. Light. A continuation of courses 22 and 23.
Spring, hours to be arranged.

PHYSIOLOGY

Professor SIMPSON

1. Physiology. The organs of the body are studied both in their gross anatomy and in their microscopical structure. Animal demonstrations are used to illustrate the function of different organs.
Fall, 11:30; 9 W.

2. Physiology. Continuation of course 1. Winter, 11:30 9 W.

3. Medical Physiology. Muscles, nerves, and special senses. Lectures and recitations, with demonstrations on animals and with models. Text book, Howell. Fall, 8:30; 9 W.

4. Medical Physiology. Continuation of course 3. The eye and other special senses; blood, lymph, and circulation. Text book, Howell. Winter, 9:30; 9 W.

5. Medical Physiology. Continuation of course 4. Respiration; secretion; digestion; excretory organs; nutrition, heat production, and regulation; reproductive organs. Spring, 8:30; 9 W.

6. Medical Physiology. Laboratory course accompanying course 4. Individual experiments with muscles of frogs and terrapin showing elasticity, effect of varying strength of electric currents, fatigue, electrotonus, effect of temperature on muscle contraction; tonometer experiments with terrapin hearts; pulse velocity; blood pressure and respiration. Winter, 9:30 to 11:30; 9 W.

Pharmacology

1. Pharmacology. Crude drugs, their origin, preparation, and dosage. Laboratory work covering the preparation of the more common pharmaceutical preparations such as fluid extracts, tinctures, ointments, pills, etc.; writing of prescriptions; testing the actions of drugs on animals.

Spring, recitations at 9:30; laboratory 10:30 to 12:30, Monday, Wednesday, and Friday; 10:30 to 11:30, Tuesday and Thursday; 9 W.

2. Pharmacology. Continuation of course 1. Lectures, recitations, and demonstrations. Text book, Sollman. Fall, 9:30; 9 W.

ROMANCE LANGUAGES AND LITERATURES

Professor STATHERS and Mr. DARBY

French

1. Elementary Course. Grammar, reading, and composition. Stress is laid on the pronoun and the conjugation of the verb. Constant practice in pronunciation and oral understanding. Fraser and Squair's French Grammar; Aldrich and Foster's French Reader.

Fall, first section, 8:30, Professor STATHERS, 11 W.; second section, 9:30; Mr. DARBY, 16 W.

2. Elementary Course. A continuation of course 1. Grammar, reading, and composition, with continued practice in pronunciation, and oral understanding. Fraser and Squair's French Grammar; Aldrich and Foster's French Reader.

Winter, first section, 8:30; Professor STATHERS, 11 W.; second section, 9:30; Mr. DARBY, 16 W.

3. Elementary Course. A continuation of course 2. Grammar, reading, composition, and oral understanding. Halevéy's L'Abbé Constantin and Verne's Vingt mille Lieues sous les Mers.

Spring, first section, 8:30; Professor STATHERS, 11 W.; second section, 9:30; Mr. DARBY, 16 W.

4. Fiction of the Nineteenth Century. Reading of Mérimée's Colomba, and George Sand's La Petite Fadette. Composition once a week. Particular attention given to pronunciation and oral understanding.

Fall, first section, 8:30; second section, 10:30; Mr. DARBY, 16 W.

5. Fiction of the Nineteenth Century. A continuation of course 4, with additional emphasis on syntax and idioms. Alphonse Daudet's Tartarin de Tarascon, Pierre Loti's Pêcheur D'Islande, and Anatole France's Le Crime de Sylvestre Bonnard. Composition.

Winter, first section, 8:30; second section, 10:30; Mr. DARBY, 16 W.

6. France and the French People of To-day. Study of the country from a commercial and geographical standpoint; Parisian and provincial life; reading and discussion in French of magazine articles and questions of popular interest. Daily theme work and as much French conversation as practicable. Work largely based on Foncin's Le Pays de France.

Spring, first section, 8:30; second section, 10:30; Mr. DARBY, 16 W.

7. Literature of the Seventeenth Century before 1660. The work centers on the life and writings of Corneille but is accompanied by lectures on the origin of the drama, development of the language and influence of Corneille's precursors and contemporaries. Essays, collateral reading and reports.

Fall, 9:30; Professor STATHERS, 11 W.

8. Literature of the Seventeenth Century after 1660. Study in class of representative works of authors of the period. Lectures on

the literature, society and political history of the reign of Louis XIV. Essays, collateral reading and reports.

Winter, 9:30; Professor Stathers, 11 W.

9. Literature of the Eighteenth Century. Study of the lives and works of Voltaire, Beaumarchais, Lesage, Montesquieu, Diderot and Rousseau. Lectures and papers on the religious, political and philosophical questions of the century.

Spring, 9:30; Professor Stathers, 11 W.

10. Advanced Prose Composition and Conversation. The aim is to give facility in idomatic expression both in writing and in speaking. The work includes paraphrasing, translation and discussions in French based on subjects of moderate difficulty and is accompanied by a systematic review of French syntax. Omitted in 1911-12.

Fall, 10:30; Professor Stathers, 11 W.

11. Advanced Discourse and Phonetics. Designed for those who desire fluency in intricate construction of the language and for those who expect to teach it. The course includes the study of phonetics and grammatical construction and the discussion of books, periodicals, courses of study and class-room problems. Daily themes and collateral reading. Omitted in 1911-12.

Winter, 10:30; Professor Stathers, 11 W.

12. Historical French Grammar. Study of the origin and development of modern French syntax from popular Latin through old French and the various formative periods of the language. Reading of selected works best suited to illustrate this development. Omitted in 1911-12. Spring, 10:30; Professor Stathers, 11 W.

13. The Romantic Movement. Lectures on the origin, development and decline of romanticism. Study of representative works of the first half of the nineteenth century. The Cénacle and its influence. Essays, reading and reports.

Fall, 10:30; Professor Stathers, 11 W.

14. French Literature since 1850. Careful study of the different literary groups and schools of the period, critical reading of representative works of leading authors and lectures on the contemporary drama, novel, and short story.

Winter, 10:30; Professor Stathers, 11 W.

15. Lyric Poetry. Critical reading of representative poems from Villon to the present time. Versification and poetic forms; lives

and works of the leading poets. Special attention is given to Ronsard, Malherbe, Chénier, Lamartine, Hugo, Musset, the Parnassians and the Symbolists. Spring, 10:30; Professor STATHERS, 11 W.

NOTE:—When the demand is sufficient, advanced courses are offered qualified students as follows:

16. Literary Criticism in France. The Nineteenth century especially, studied in the works of Sainte-Beuve, Lemaître, Faguet, Taine, and Brunetière.

17. Literature of the Sixteenth Century. Selections from Rabelais, Marot, and Montaigne; Ronsard and the Pléiade; Darmesteter and Hatzfeld, Le Seizème Siècle en France.

18. Old French Readings. Inflection, derivation and syntax. Paris et Langlois: Chrestomathie du Moyen Age; Paris: Extraits de la Chanson de Roland.

19. Old French Readings and Phonetics. A continuation of course 18. Bartsch and Horning's La Langue et la Littérature française depuis le neuvième siècle jusqu' au quatorzième siècle.

Spanish

Professor STATHERS

The following courses have in view both the study of literature and the application of the language to commercial uses and conversation. The close relations of our country with those of Spanish America necessitate the study of Spanish as a living and not as a dead language. Hence, while due attention is given to the rich literature of Spain, full opportunities are offered to acquire a practical knowledge of the language.

NOTE:—The courses in Spanish will not be given during 1911-12 except when substituted for courses in French for which there may be no demand. Students who desire to elect courses in Spanish should consult the instructors beforehand.

1. Elementary Course. Grammar and reading, with practice in pronunciation, composition, and oral understanding. Hills and Ford's Spanish Grammar and Hills' Spanish Tales. Fall, 10:30; 11 W.

2. Intermediate Spanish. Grammar, oral exercises, easy conversation, and select readings from contemporary authors. Hills' and Ford's Spanish Grammar and Fontaines' Flores de España.
Winter, 10:30; 11 W.

3. Modern Fiction. Study of two or three works to be selected from the following: Perez-Galdós, Doña Perfecta and Marianela; Valdés' José and La Alegriá del Capitán Ribot; Valera's Pepita Jiménez and El Pájaro Verde; Alarcon's El Capitán Veneno and El Niño de la Bola. Spring, 10:30; 11 W.

4. Modern Drama. Careful study of Perez-Galdós' Electra, Nuñez del Arce's El Haz de Leña, and Moratín's El Sí de las Niñas. Composition once a week throughout the course, with special emphasis on syntax and idioms. Fall, 11:30; 11 W.

5. Commercial Spanish and Current Magazine Literature. Business correspondence and commercial terms; conversation in Spanish on topics relating to travel, daily life, and questions of present interest; reading selected from Spanish newspapers and magazine articles of the day; essays and advanced composition.
Winter, 11:30; 11 W.

6. Classic Drama and the Age of Cervantes. Critical reading of Lope de Vega's La Estrella de Sevilla, Calderón's La Vida es Sueño, and extracts from Cervantes' Don Quixote de la Mancha. Papers on the lives, works, and times of these authors.
Spring, 11:30; 11 W.

Italian

Mr. DARBY

It is desirable that students beginning Italian should have some knowledge of Latin.

NOTE:—The following courses in Italian will not be offered in 1911-12 except when substituted for courses in French for which there may be no demand. Students should consult the instructor before registering.

1. Elementary Course. Pronunciation, elementary grammar, easy reading, composition, and oral understanding. Smith's Italian Principia; Bowen's Italian Reader. Fall, 11:30; 16 W.

2. Elementary Course. A continuation of course 1. Grammar, reading, dictation, and composition, with continued practice in pronunciation and oral understanding. Smith's Italian Principia; Bowen's Italian Reader. Winter, 11:30; 16 W.

3. Elementary Course. A continuation of course 2. Smith's Italian Principia; Manzoni's I Promessi Sposi. Spring, 11:30; 16 W.

4. Readings in Modern Italian. Selected from the works of Pellico, Amicis, Farina, Del Testa, Barrilii, Serao, and Verga, Grandgent's Italian Composition.

5. Italian Drama of the Eighteenth Century. Selected plays of Metastasio, Alfieri and Goldoni. Composition.

6. Introduction of the Study of Dante. Selections from La Vita Nuova and La Divina Commedia.

ZOOLOGY

Professor REESE and an assistant

The courses in this department are intended to serve as a means of general culture and to perpare students to become investigators and teachers of zoology. A wide field is offered for valuable investigation in the organization, functions, habits, and evolution of animal life. Upon the results of such investigations rest to a large extent the science of medicine, psychology, and sociology. Courses 1, 2, 3, and 10 are of especial interest to teachers.

1. Animal Biology. A study of invertebrate animals. The study of structure is conducted with constant reference to function and adaptation, and the student performs simple experiments on the behavior of protozoa, hydra, earth worm, etc. The lectures deal with the structure and physiology of the cell, reproduction, symbiosis, commensalism, etc. Three lectures and four hours laboratory work per week.

Fall, Monday, Wednesday and Friday, 8:30; laboratory, Monday and Tuesday, 1:30; 50 W.

2. Vertebrate Zoology. Dissection of the dogfish, perch, mudpuppy or frog, turtle and cat; lectures on the biology, comparative anatomy, and evolution of vertebrates. Two lectures and six hours laboratory work per week.

Winter, Monday and Wednesday, 8:30; Laboratory, Monday, Tuesday and Thursday, 50 W.

3. Vertebrate Zoology. Continuation of course 2.
Spring, Monday and Wednesday, 8:30; Laboratory, Monday, Tuesday and Thursday, 50 W.

6. Vertebrate Embryology. Cleavage, gastrulation and the formation of the germ layers are studied in the frog and the chick, the development of organs in the chick and the pig. These materials are supplemented by serial sections, dissections, and cleared preparations of human embryos in various stages. The lectures deal chiefly with human development. Reese's Introduction to Vertebrate Embryology, 2nd edition. Prerequisites, courses 2 and 3, or an equivalent.
Fall, 10:30-12:30; 50 W.

7. Vertebrate Neurology. Dissection of the central and peripheral nervous systems of several vertebrates and study of the components of the cranial nerves and the centers and fibre tracts in the brain of one or more fishes, an amphibian, a reptile, and a mammal. Burkholder's Anatomy of the Brain with additional lectures and collateral reading. Prerequisites, courses 1, 2, 3, and 6.
Spring, hour to be arranged; 50 W.

14. The Human Brain. A part of course 7 designed for students preparing for a medical course. Not open to other students. Lectures twice a week; laboratory work afternoons during the second half of the spring quarter. One-half credit. Spring, 11:30; 50 W.

9. Methods of Zoology. A practical course in the methods of collecting, hatching and rearing, preserving, injecting, and making microscopic preparations. Open to all students with major in zoology who have had courses 1, 2, and 3, and to others by special permission. Credit in proportion to the work done. Fall, Winter, Spring; 51 W.

10. Principles of Biology. This course deals with the conditions of animal life and the means of adaptation. It includes the study of habits, reactions, food relations, coloration, regeneration, etc.; the course of organic evolution; theories regarding the origin of species, heredity, etc. Lectures, demonstrations, and assigned readings. Prerequisite, course 1, or an equivalent.
Winter, 11:30; 49 W.

15. Comparative Embryology and Anatomy of Animals. Advanced course. 51 W.

16. Comparative Embryology and Anatomy of Animals. A continuation of course 15. 51 W.

19. Current Literature. The advanced students form a journal club, which meets weekly for reports and discussion of recent literature. One credit for the year. 51 W.

20. Research Work. Properly qualified students may undertake research work upon the morphology or physiology of animals. Credit in proportion to the work done. 51 W.

NOTE:—Courses 15, 16, 19, and 20 are for graduates or other advanced students and may be taken at any time.

THE COLLEGE OF ENGINEERING AND MECHANIC ARTS.

FACULTY

DANIEL BOARDMAN PURINTON, LL.D., *President*

FREDERICK LINCOLN EMORY, M.M.E., M.E., *Professor of Mechanics and Applied Mathematics*

CLEMENT ROSS JONES, M.M.E., *Professor of Mechanical Engineering*

WILL HAZEN BOUGHTON, C.E., *Professor of Civil Engineering*

RUSSELL LOVE MORRIS, C.E., *Professor of Civil Engineering*

EDWIN FAYETTE CHURCH, JR., M.S., *Professor of Machine Design*

WILLIAM ELMORE DICKINSON, A.B., M.M.E., *Professor of Electrical Engineering*

ROBERT BRUCE BRINSMADE, B.S., E.M., *Professor of Mining Engineering*

JOHN B. GRUMBEIN, B.S.M.E., *Instructor in Mechanical Engineering and Foreman of Wood Shop*

THOMAS HOWARD CATHER, *Instructor in Machine Shop and General Foreman of Shops*

RUFUS. A. WEST, *Assistant in Metal Working and Stationary Engineer*

ALEXANDER REID WHITEHILL, PH.D., *Professor of Chemistry*

SAMUEL B. BROWN, A.M., *Professor of Geology and Mineralogy*

FREDERICK WILSON TRUSCOTT, PH.D., *Professor of Germanic Languages and Literature*

FREDERICK LAWRENCE KORTRIGHT, D.Sc., *Professor of Chemistry*

JOHN ARNDT EIESLAND, PH.D., *Professor of Mathematics*

CHAUNCEY WILLIAM WAGGONER, PH.D., B.S.C.E., *Professor of Physics*

MADISON STATHERS, PH.D., *Professor of Romance Languages*

WILLIAM JACKSON LEONARD, *Associate Professor of Fine Arts*

DAVID DALE JOHNSON, A.M., *Assistant Professor of English*

ARTHUR R. GRAVES, A.M., *Instructor in Germanic Languages and Literatures*

ARLEIGH LEE DARBY, A.M., *Instructor in Romance Languages*

CHARLES MOON, B.S.C.E., *Instructor in Physics*

ORGANIZATION

This College comprises the following departments:

Civil Engineering;

Mechanical and Electrical Engineering and the Mechanic Arts;

Mining Engineering;

Mechanics and Applied Mathematics.

The requirements for admission and graduation, the arrangement of the courses of instruction, and such other work as pertains to this College, are provided for by its faculty, in conjunction with the University Council.

BUILDINGS AND EQUIPMENT

All instruction in engineering subjects is centralized in the Mechanical Hall. This building is located on the southeast corner of the campus and fronts the athletic field. It really consists of

two buildings connected by covered passageways. The main building is 168½ feet long and three stories high, with a well-lighted basement running under its entire length. In this building are the lecture, recitation, drawing, and instruction rooms of the various engineering departments, the machine and woodworking shops, and the mechanical and electrical laboratories. The rear building known as the power plant, is one story in height and contains the boiler and engine rooms, the forge shop, the foundry, and the sheet metal and pipe fitting shop. The drawing rooms, shops, power plant, and laboratories are equipped with modern apparatus and machinery for practical and experimental work.

In the drawing rooms are collections of models of bridges, furnaces, structures, mechanisms, engines, pumps, valves and valve gears; descriptive geometry models; sets of charts, state and government maps, surveys, photographs, engineering specifications, drawings, tracings, and blue prints. In connection with the drawing rooms there is a blue printing and photographic room and dark closet, equipped with electric and sun printing apparatus and photographic outfit.

The shops consist of a woodworking shop, forge shop, foundry, machine shop, and sheet metal and pipe fitting shop. Each work shop occupies a separate room and is independently equipped with suitable benches, measuring instruments, tools, shop appliances, and machines, such as are ordinarily installed in the larger engineering colleges and commercial shops. These afford ample facilities for performing all the fundamental operations in machine construction and for building machines of moderate size.

The power plant equipment consists of different types of steam and gas engines, direct-connected or belted to electric generators; a 75 K. W. Westinghouse condensing steam turbine direct-connected to a direct current generator; steam boilers, equipped for burning both gas and coal; an independently fired superheater; pumps, condensers, air compressors, steam traps and other auxiliary apparatus, providing the means for furnishing any desired kind of power. The power for the shops and laboratories is ordinarily obtained from a 50 H. P. Westinghouse two-cylinder gas engine, direct-connected to a 37½ K. W. Westinghouse direct-current generator, from which it is distributed to motors or other apparatus, but this can be increased by operating independently, or in parallel, one or more additional machines driven by the steam turbine, the steam engines, or by a rotary converter connected with the city mains. Single and two-phase alternating current may be obtained from city mains or from a 20 K. W motor generator set, and one, two, and three-phase current may be developed by a double-current dynamo driven as an inverse converter or as an alternating current dynamo.

The engineering laboratories are fitted with standard gauges, measuring, calculating, and recording instruments; apparatus and appliances for qualitative and quantitative experimental work in civil, mechanical, steam, hydraulic, electrical and mining engineering.

The testing laboratory is equipped with apparatus and machines for testing cement, iron, steel, brick, stone, and other materials of engineering. The principal machines and apparatus are an Olson testing machine of 400,000 pounds capacity, taking tension and compression specimens up to six feet, and beams up to sixteen feet in length; a 50,000-pound Riehle testing machine; a 20,000-pound Riehle automatic and autographic testing machine; a 10,000-pound Olsen transverse testing machine; a 60,000 inch-pound Riehle-Miller torsion machine; two Fairbanks cement testers; a standard abrasion cylinder; besides smaller apparatus for testing cement, lubricating oils, and extension and deflection of materials.

The mechanical and steam laboratories contain small steam and gas engines, a compound air compressor with electric and mechanical control, Westinghouse air brake apparatus, rotary air motors, a hot air engine, a small vertical steam boiler, a direct steam driven ventilating fan, dynamometers, friction brakes, condensers, injectors and ejectors, steam and gas engine indicators, revolution counters, planimeters, anemometers and apparatus for testing pressure gauges, indicator springs, thermometers, flow of steam and air through nozzles, etc. These are supplemented by the power plant equipment previously described, which affords facilities for steam and gas engine trials and boiler tests with larger units, and also provides facilities for various lines of experimental investigation.

The electrical laboratory is provided with a number of small compound, shunt and series-wound direct-current generators and motors, ranging from 2½ to 20-kilowatt; two and three-phase alternating current generators and motors of frequencies from 20 to 133 cycles, and capacities ranging from 2 to 20-kilowatt; rotary converter and motor generator sets; an 8-horse-power variable speed Stow motor, driving a 5-kilowatt, 2-phase, 220-volt, 10 pole, alternator, which may give any frequency from 40 to 133 cycles; a 3-horse-power inter-pole motor; a 3-horse-power Thompson-Ryan variable speed motor, which, driving a small alternator, affords frequencies from 15 to 60 cycles; a 5-horse-power Lamme series single-phase motor; a 3-horse-power self-starting, Century, single-phase induction motor; a 5-horse-power General Electric, single-phase motor; a 10-horse-power Stanley 2-phase induction motor, equipped with compensator, condensers, and transformers; various types of Cutler-Hammer and other speed regulating and controlling apparatus; static, auto and constant-current transformers; a welding transformer; a high poten-

tial transformer for testing insulation, etc.; a Thodarson set of experimental apparatus for demonstrating any of the principles of electricity; a Queen & Co.'s testing set, with standards of capacity, induction and resistance, and with a potentiometer and standard cell, for standardizing electrical instruments; a General Electric oscillograph with accessories; standard and commercial indicating and recording measuring instruments; synchronism and power-factor indicators; dynamometers; permeameters, galvanometers; tachometers and speed counters; rheostats of various types and capacities; and six distributing panels of switchboard. The photometric and the storage battery equipments of the department of physics are also available in connection with the above. This is also supplemented by the larger generating and controlling units in the power plant.

The hydraulic laboratory equipment consists of a compound duplex steam pump supplying water to a closed steel pressure tank, from which run headers arranged for the insertion of orifices, nozzles, and pipes supplying the various hydraulic motors; concrete storage tanks; measuring tanks and weighing scales; Cascade water wheel, Venturi meter, water meters, steel weir-box, weir-gauges, and other minor measuring and controlling apparatus.

The passenger locomotive donated by the Baltimore & Ohio Railroad Company furnishes a nucleus for instruction in railway engineering.

The Ingersoll-Rand and Sullivan Machinery Companies have each recently furnished the department of mining engineering with a compressed air mining machine and also with a rock drill and tripod mounting, complete.

Transits, levels, compasses, etc., are provided for the use of students in land and mine surveying and in highway and railway construction.

The latest trade literature, catalogues, and reports of commercial developments in engineering are kept in classified files for students' reference. The University library has a thoroughly classified and indexed collection of the standard and latest books in engineering and the allied sciences, complete bound sets of the transactions of several scientific and engineering societies, and current issues and bound volumes of the principal scientific and technical periodicals.

METHODS OF INSTRUCTION

In the class-room, instruction is given by lectures, combined with text-book study and recitation. Engineering problems and subjects are assigned to be worked out in the library or drawing-room, in the field, the shop, or the laboratory. Visits of inspection

to industrial establishments and power plants are made whenever it is possible to arrange for them.

The method of instruction in manual training and the mechanic arts is to assign in the beginning a few carefully selected exercises by which the student is familiarized with the fundamental operations of constructive mechanics. Later, such instruction is combined with the work of constructing machine elements, tools, and apparatus.

In engineering drawing and designing, the work is carried along with the study of actual typical details of structural elements or with related practical and experimental work in the laboratories and mechanical shops. Frequent reference is made to models, to blue prints of engineering structures, and to existing work in the institution or elsewhere. An opportunity is also afforded for the necessary graphical treatment of engineering problems arising in lectures and the class-room instruction.

In experimental engineering, the students are required to make scientific observations, keep records of tests, facilitate deductions therefrom by the use of calculating instruments, tabulate and plot results, and make reports upon the test in due form. Each member of the class is required to use and to become familiar with all the instruments and apparatus of any given course. The classes are divided into groups of two or three students and furnished with mimeographed notes and forms.

Lectures, field practice, mimeographed notes, collateral reading, conference work, and sketching, accompany all the practical lines of work.

FACILITIES FOR PRACTICAL WORK

The University is located in a region which affords the student unusual opportunities for practical observation and education in engineering. Morgantown is situated practically at the edge of three extensive coal regions; the Fairmont, the Deckers' Creek and the Connellsville fields. The nearest large workings in the Pittsburg coal seam are within a mile of the University and the nearest in the Upper Freeport vein are only four miles away. Connellsville is only forty-five miles distant from Morgantown, and Pittsburg, the center of the world's greatest iron and steel industries, is 103 miles distant.

West Virginia's gas and oil districts approach within four miles of Morgantown and supply fuel for numerous factories. There are two brick works in the city, making building and paving brick from the local clay and shale; and twelve glass factories in the vicinity, producing pressed, plate, and cut glass, window glass, and bottle glass from the adjoining sandstone beds. At Mannheim is a large portland cement mill and another is being erected in the Decker's Creek valley.

ENGINEERING SOCIETY

The Engineering Society is organized in connection with the Engineering departments. It is conducted by the students of these departments, and meets once in two weeks. Its object is the investigation and discussion of scientific subjects. All engineering students are requested to join this organization and perform such work as its rules require. Students taking any of the four-year courses leading to the baccalaureate degrees in engineering are expected to engage actively for three years in the work of the society.

THE ENGINEERING CURRICULA

REGULAR CURRICULA FOR UNDERGRADUTE STUDENTS

1. A four-year curriculum leading to the degree of Bachelor of Science in Civil Engineering.
2. A four-year curriculum leading to the degree of Bachelor of Science in Mechanical Engineering.
3. A four-year curriculum in electrical engineering leading to the degree of Bachelor of Science in Mechanical Engineering.
4. A four-year curriculum leading to the degree of Bachelor of Science in Engineering of Mines.

CURRICULA FOR GRADUATE STUDENTS

1. A curriculum leading to the degree of Civil Engineer.
2. A curriculum leading to the degree of Mechanical Engineer.
3. A curriculum leading to the degree of Electrical Engineer.
4. A curriculum leading to the degree of Engineer of Mines.

SPECIAL CURRICULA

1. Groups of electives for students in other colleges taking work in engineering subjects.
2. Special curricula in civil, mechanical, electrical, and mining engineering, for students who do not desire an engineering degree.
3. Special curricula in manual training for teachers.
4. Special curricula in the mechanic arts for artisans, mechanics, apprentices, stationary engineers, electricians, etc.

NOTE:—The purpose of the undergraduate engineering curricula is to give the student a broad foundation for his professional career. Only a limited amount of specialization is considered wise. The study of English and other modern languages, the leading sciences, and especially mathematics and mechanics, prepares the student for technical subjects. In the latter subjects instruction in the theoretical principles involved is supplemented by field practice or work in the laboratory, shop, and drafting room. The work for a degree is nearly all prescribed, but candidates have an opportunity for a limited amount of specialization before graduation. For full particulars see statements of requirements for each degree.

REQUIREMENTS FOR ADMISSION TO THE COLLEGE OF ENGINEERING

ADMISSION TO REGULAR CURRICULA

The subjects and number of units in each required for admission to the regular four-year engineering curricula are as follows:

English	3
Modern Languages	2
Algebra	1½
Plane and solid geometry	1½
Physics with laboratory	1
Chemistry with laboratory	1
History	1
Free hand drawing	1
*Elective	2
Total	14

The following substitutions may be made:

1. One unit in ancient language for one unit in modern language.

2. College work in French, German, geology, mechanic arts, or mechanical drawing which is prescribed work for an engineering degree may be offered for entrance instead of an equivalent amount of preparatory work in physics, chemistry, free-hand drawing, or

*For mining engineering one of the electives must be botany, zoology or biology

modern language. In such case the preparatory work for which substitution is made must be taken as college work in the freshman year.

3. Solid geometry may be taken as college work when trigonometry has been offered for entrance.

For a detailed statement of the above units, see page 37.

ADMISSION AS SPECIAL STUDENTS

Students desiring to take special work in the College of Engineering and Mechanic Arts are required to conform to the general regulations of the University regarding special students. (See page 35.) Such students must give satisfactory evidence that they are prepared to take the desired studies advantageously; but if they subsequently desire to become candidates for a degree, or to take a regular curriculum in engineering, they must pass the required entrance examination for that year.

CREDIT FOR WORK DONE IN ABSENCE

Students of the College of Engineering are permitted to apply for advanced standing for not more than two credits for practical work done in the field, shops, or drafting room in the following subjects during vacation or other periods of absence from the University:

Civil Engineering

Subject	Credit
Drawing 9 and 11	1 2-5
Thesis 21	1

Mechanical Engineering

Woodworking 1 and 3	1 1-5
Foundry 7	2-5
Forging 5	2-5
Tinsmithing and pipe fitting 9	2-5
Machine shop 10 to 13	1 3-5
Machine construction 14 and 15	4-5
Electrical construction 17 and 18	4-5
Mechanical drawing 20 to 23	1 3-5
Machine drawing 30	2-5

Mining Engineering

Mine visits 1	2-5
Mine surveying 2	2-5
Mine laboratory	2-5

Cards for examinations in the above courses will be issued by the chairman of the committee on classification and grades without further action by the committee, provided that the application for advanced standing card shall be made before the work is done, or within one week after the student's return to the University from vacation or other absence, if before such absence, he did not know that he would have an opportunity to do the work.

REQUIREMENTS FOR GRADUATION FROM THE COLLEGE OF ENGINEERING

To receive any of the baccalaureate degrees conferred in the College of Engineering the student must have satisfied all the entrance requirements as stated above on page 129 and must have received forty-five credits for college courses. The particular curriculum and distribution of work prescribed for each degree are stated below.

Students who matriculated previous to September, 1910, may offer forty-four credits instead of forty-five credits for graduation.

THESES

Every candidate for a baccalaureate or graduate degree in engineering will be required to prepare a thesis on some subject relating to a special branch of engineering or other department of applied science. The thesis must be either a design or a review of some machine, structure, or process, belonging to some department of scientific investigation. It must be fully elaborated and accompanied by the necessary working drawings or models required for the proper elucidation of the subject of the thesis. With its accompanying drawings it will be presented for approval, first to the instructor under whose guidance it has been prepared, then to the head of the department in which the degree is to be conferred. A typewritten copy of the thesis, prepared according to official specifications for theses, and signed by the instructor in charge and the head of the department, must be placed in the University library before graduation.

UNDERGRADUATE CURRICULUM IN CIVIL ENGINEERING

This is a four-year curriculum leading to the degree of Bachelor of Science in Civil Engineering. It has been planned with a view to laying a broad and substantial foundation for the general technical knowledge needed by practitioners in civil engineering.

Subject	*Course numbers*	*Credit value*
Mathematics:—		
Trigonometry	9	1
Algebra	8	1
Analytical geometry	11	1
Differential calculus	15	1
Integral calculus	16	1
Language:—		
German, French or Spanish		3
English	20, 21	1
Geology:—		
General geology	2	1
Economic geology	5	1
Physics:—		
General physics	6, 7, 8	3
Applied electricity	14	1
Mechanics and applied mathematics:—		
Statics	2	1
Kinetics	3	1
Strength of materials	4	1
Power	5	1
Mechanical engineering:—		
Woodworking	1	1
Mechanism	24, 25	1
Testing laboratory	70, 71, 72	1
Heating and ventilating	46	3-5*
Mining engineering:—		
Mining	3	3-5
Ore dressing	9	2-5

Mining	4	3-5*
Mining	5	3-5*
Mine design	6	2-5*
Mine operation	12	2-5*
Civil engineering:—		
Drawing	9, 11	1 2-5
Descriptive geometry	2, 3	2
Land surveying	4	1
Railroad surveying	5	1
Topographical surveying	6	1
Railroad construction	7	1
Roads, streets, and pavements	8	1
Hydraulics	12	1
Steretomy	13	3-5
Stresses in roofs and bridges	14, 15	2
Bridge design	16	1
Municipal and sanitary engineering	17	3-5
Railroad economics	18	1
Masonry construction	19	1
General engineering construction	20	1
Thesis	21	1
Geodesy	22	2-5*
Contracts and specifications	23	2-5
Military science and tactics		2
Total required		45

*Elective.

Students exempt from work in military science and tactics will take instead thereof two courses approved by the class officer.

Students who wish to specialize along the lines of chemistry, geology, physics, mining engineering, hydraulics, structural design or electrical engineering, will be allowed to do so, under the following conditions: no substitution or election will be allowed before the beginning of the third year; any student desiring so to specialize must prepare a list of the studies he wishes to substitute or elect, and a scheme of the work proposed, which must be approved by the head of the department and the committee on classification and grades, and filed with the registrar.

DISTRIBUTION OF THE WORK FOR THE DEGREE OF B.S.C.E.

Each subject is followed by its department number and, if a fractional course, by its credit value.

First Year

Hour	*Fall*	*Winter*	*Spring*
8:30	German* (See note 1)	German 5*	German 6*
9:30	Engl. 20, 3-5, M., W. and F.	Engl. 21, 2-5, M. and F. C. E. Draw. 9, Tu., W. and Th.	Surveying 4
10:30	Algebra 8	Trigonometry 9	An. Geom. 11
11:30	Chemistry 1*	Chemistry 2*	Chemistry 3*
1:00	Woodworking 1, 2-5 M. E. Draw. 20, 3-5	Woodworking 1, 3-5 C. E. Draw. 9	M. E. Draw. 22, 2-5
4:00	Military Science, 1-3	Military Science, 1-3	Military Science, 1-3

*The one not presented for admission.

Second Year

8:30	Dif. Calculus 15	Int. Calculus 16	Mechanics 2
9:30	Physics 6	Physics 7	Physics 8
10:30		Mechanism 24, 3-5, M., W., F.	
11:30	Descrip. Geom. 2.	Descrip. Geom. 3	Top. Surv. 6, M., W. and F.
1:30		Mechanism 25, 2-5, W. and F.	Top. Surv. 6, W and F.
4:00	Military Science, 1-3	Military Science, 1-3	Military Science, 1-3

Physics 6, 7, 8 laboratory days and hours to be arranged.

Third Year

8:30	R. R. Surv. 5	R. R. Construction 7	Masonry Const. 19
9:30	Mechanics 3	Mechanics 4	
10:30	Stereotomy 13, 3-5, M., W. and F.	Geology 5	Hydraulics 12
11:30	Geology 2		Roads, etc. 8
1:30		C. E. Draw. 11, 2-5	
Sat.	Mech. Lab. 70, 1-3	Power Meas. 71, 1-3	Testing Mat. 72, 1-3

Fourth Year

8:30	Power 5	Heat. and Vent. 46, 3-5, M., W., F.	
9:30	Mining 3, 3-5, M., W. and F. Ore Dressing 9, 2-5, Tu. and Th.	Geodesy 22, 2-5 Tu. and Th. See note 2	Eng. Const. 20 See note 2
10:30	Bridges 14	Bridges 15	R. R. Econ. 18
11:30	San. Eng. 17, 3-5, M. W. and F. Con. and Spec. 23, 2-5, Tu. and Th.	Physics 14	
1:30		Bridge Design 16	Thesis 21

NOTE 1:—Students are expected to take three courses of French, German, or Spanish as college work. The three taken may be any for which they are prepared. Those who enter with credit for three courses of German may take second-year German as scheduled above. Others may take their language work as they can arrange it. Those who offer a third unit of language for admission instead of a unit of chemistry will take the chemistry as college work as scheduled at 11:30.

NOTE 2:—Candidates for the degree B.S.C.E. who desire more work in mining engineering may take Mining 4 and Mine Design 6 at 9:30 in the winter in place of Heating and Ventilating 46 and Geodesy 22; also Mining 5 and Mine Operation 12 at 9:30 in the spring in place of Engineering Construction 20.

UNDERGRADUATE CURRICULUM IN MECHANICAL AND ELECTRICAL ENGINEERING

The following four-year curricula leading to the degree of Bachelor of Science in Mechanical Engineering are offered:

1. Mechanical Engineering. For the benefit of those wishing to specialize in machine design, machinery and mill work, or other mechanical engineering subjects, an optional or alternative curriculum for the fourth year is provided.

2. Electrical Engineering. The first three years of both the mechanical and electrical curricula are the same, the differentiation beginning in the fall term of the fourth year.

These two courses have much in common, and in accordance with the custom of leading engineering schools, no distinction is

made in the degree which is given. Any graduate who so desires may receive, in addition to his degree, a certified statement of the course which he pursued.

Both curricula are planned to prepare the student for intelligent work involving the design, selection, cost, construction, installation, testing and management of power generators, prime movers and machinery for manufacturing, transportation and power transmission; the planning, equipment, cost, construction, and management of manufacturing plants, shops and factories; lighting, heating and ventilating.

The degree of Bachelor of Science in Mechanical Engineering will be conferred upon any student who satisfies all entrance requirements and secures thirty-six credits for the following required college courses, and eight additional credits for courses selected from one of the elective groups given below.

Students entering the freshman class after September 1, 1910, must secure for graduation a total of forty-five credits for required and elective courses. Two of the credits must be for work in military science except in the case of students exempt under the provisions stated on page 195. Students thus exempt must offer two additional elective credits in place of the work in military science.

REQUIRED COURSES

Subject	*Course numbers*	*Credit value*
Language:—		
French, German, or Spanish		3
English	20, 21	1
Mathematics:—		
Trigonometry	9	1
Advanced algebra	8	1
Analytical geometry	11	1
Differential calculus	15	1
Integral calculus	16	1
Chemistry:—		
Analytic chemistry	4, 5, 7	1
Geology:—		
General geology	2	1

Physics:—				
General physics	6, 7, 8		3	
Mechanics and applied mathematics:—				
Development and utilization of power	5		1	
Analytic mechanics	2, 3		2	4
Strength of materials	4		1	
Civil Engineering:—				
Descriptive geometry	2		1	
Land surveying	4		1	2
Mechanical engineering:—				
Mechanic arts:				
Woodworking	1, 3		1 1-5	
Foundry	7		3-5	
Forging	5		2-5	
Tin smithing and pipe fitting	9		2-5	5
Machine shop	10, 11, 12, 13		1 3-5	
Machine construction	14, 15			
or Electrical construction	17, 18		4-5	
Mechanical drawing and machine design:				
Mechanical drawing	20, 21, 22		1 1-5	
Mechanism and machinery	24, 26		1 1-5	
Mechanism (drawing)	25, 27		4-5	
Valves and valve gears	28		3-5	5 3-5
Valve gears (drawing)	29		2-5	
Machine drawing	30, 32		4-5	
Machine design	31		3-5	
Steam engineering:—				
Thermodynamics	40		1	
Heat engines and motors	41		3-5	2 1-5
Power plant design	43		3-5	
Experimental engineering:—				
Mechanical laboratory	70		1-3	
Power measurement	71		1-3	
Testing materials	72		1-3	2 1-5
Mechanical engineering:				
Laboratory	73, 74, 75		1 1-5	
Thesis			1	
Total			36	

GROUPS OF ELECTIVE COURSES

Mechanical—Regular

Subject	*Course numbers*	*Credit value*
Mechanical engineering:—		
Steam engine design	34	3-5
Drawing and designing	35, 36, 37	1 4-5
Civil engineering:—		
Hydraulics	12	4-5
Structural engineering	24	3-5
Electrical engineering:—		
Electrical distribution	55	3-5
Power transmission	54	3-5
Electric lighting and railways	56	3-5
Electrical laboratory	60, 61	4-5
Physics:—		
Applied electricity	11, 12	1 3-5
Total		8

Mechanical—Alternative

Mechanical engineering:—		
*Steam engine design	34	3-5
*Steam boilers	42	3-5
Materials of engineering	47	1
Heating and ventilating	46	1
*Machine design	33	1
Machinery and mill work	45	1
*Drawing and designing	35, 36, 37	1 4-5
Electrical engineering:—		
*Electrical engineering	66	3-5
Civil engineering:—		
Hydraulics	12	1
*Structural engineering	24	3-5
Any other approved course		1 or more

Mechanics and applied mathematics:—		
Any approved course		1 or more
Physics:—		
*Applied electricity	11, 12	1 3-5
Mining engineering:—		
Machinery and haulage	4	3-5
Metallurgy	10, 11	4-5
Total to be selected		8

*Students selecting their elective course from this group will be required to take the courses marked with an asterisk, unless equivalent substitutions are made with the approval of the head of the department and the committee on classification and grades.

Electrical

Electrical engineering:—		
Electrical machinery	51, 52, 53	1 3-5
Electrical distribution	55	3-5
Electric lighting and railways	56	3-5
Power transmission	54	3-5
Electric. engineer. laboratory	60, 61, 62	1 1-5
Designing and drawing	57, 58, 59	1 4-5
Physics:—		
Applied electricity	11, 12	1 3-5
Total		8

Students who wish to specialize in telephone engineering will be permitted to substitute Telephone Engineering 65 for Electric Lighting and Railways 56.

DISTRIBUTION OF THE WORK FOR THE DEGREE B.S.M.E.

Each subject is followed by its department number and, if a fractional course, by its credit value.

First Year

Hour	*Fall*	*Winter*	*Spring*
8:30	German 4	German 5	German 6
9:30	English 20, 3-5, M., W., and F.	English 21, 2-5, M. and F.	Land Surveying 4.
10:30	Algebra 8	Trigonometry 9.	Anal. Geom. 11.
11:30			
1:00	Mech. Draw. 20, 2-5, W. and F.	Mech. Drawing, 21, 2-5, W. and F.	Mech. Drawing 22, 2-5, W. and F.
1:00	Woodwk'g 1, 3-5, T., Th., and 8:00 S.	Foundry 7, 3-5, Tu., Th., and S.	Pattern-making 3, 3-5, Tu., Th., and S.

Second Year

8:30	Differential Calc'us 15	Integral Calc'us 16	Mechanics 2
9:30	Physics 6	Physics 7	Physics 8
10:30		Mechanism 24, 3-5, M., W., and F.	Mechanism 26, 3-5, M., W., and F.
11:30	Descriptive Geom. 2		
1:30	Anal. Chem. 4, 1-3, Tu. and Th.	Anal. Chem. 5, 1-3, Tu. and Th.	Anal. Chem. 7, 1-3, Tu. and Th.
1:00		Mechanism 25, 2-5, W. and F.	Mechanism 27, 2-5, W. and F.
1:00	Forging 5, 2-5, M. and 8:00 S.	Machine Work 10, 2-5, M. and S.	Tin and Pipe Work, 9, 2-5, M. and S.

Third Year

8:30	Power 5	Valves and Valve Gears, 28, M., W., and F.	Thermodynamics 40
9:30	Mechanics 3	Mechanics 4	Mach. Design 31, 3-5, M., W., and F.
10:30		Physics 11, 3-5, M., W., and F.	Physics 12
11:30	Geology 2		
1:30	Machine Work 11, 2-5, M. and F.	Machine Work 12, 2-5, M. and F.	Mach. Work 13, 2-5, M. and F.
1:00	Machine Drawing 30, 2-5, Tu. and Th.	Valve Gears 29, 2-5, Tu. and Th.	Mach. Drawing, 32, 2-5, Tu. and Th.
8:00	Mech. Lab. 70, 1-3, S.	Power Measure 71, 1-3, S.	Testing Mater. 72, 1-3, S.

Fourth Year (Mechanical)

8:30	Heat Engines 41, 3-5, M., W., and F.	Power Plt. Des. 43, 3-5, M., W., and S.	
	Engineering Lab. 73, 2-5, Tu. or Th.	Eng'g Lab. 74, 2-5, Tu. or Th.	Eng'g Lab. 75, 2-5, Tu. or Th.
	Elect. Lab. 60, 2-5, Tu. or Th.	Elect. Lab. 61, 2-5, Tu. or Th.	Thesis conference, Tu. or Th.
9:30	Steam Eng. Des. 34, 3-5, M., W. and F.	Struct. Eng. 24, 3-5, M., W., and F.	Elect. Lighting, 56, 3-5, M., W., and F.
10:30	Elect. Trans. 54, 3-5, M., W., and F.	Elect. Dist. 55, M., W., and F.	Hydraulics 12, 4-5, M., W., and F.
1:00	Draw. and Des. 35, 3-5, Tu., Th., and F.	Draw. and Des. 36, 3-5, Tu., Th., & F.	Draw. and Des. 37, 3-5, Tu., Th., & F.
	Mach. Const. 14, 2-5, M. and W.	Mach. Const. 15, 2-5, M. and W.	

Fourth Year (Mechanical Alternative)

Candidates for the degree of B.S.ME. may select their elective studies from the mechanical alternative group of electives, but such elective courses must be taken at the time for which they are announced in the catalogue. The required courses must be taken as scheduled above.

Fourth Year (Electrical)

8:30	Heat Engs. 41, 3-5, M., W., and F.	Power Plant Des. 43, 3-5, M., W., and F.	Thesis Conference, M., W., and F.
	Eng'g Lab. 73, 2-5, Tu. or Th.	Eng'g Lab. 74, 2-5, Tu. or Th.	Eng'g Lab. 75, 2-5, Tu. or Th.
	Elect. Lab. 60, 2-5, Tu. or Th.	Elect. Lab. 61, 2-5, Tu. or Th.	Elect. Lab. 62, 2-5, Tu. or Th.
9:30	Elect. Mach'y 51, 3-5, M., W., and F.	Elect. Mach. 52, 3-5, M., W., and F.	Elect. Light'g 56, 3-5, M., W., and F.
10:30	Elect. Trans. 54, 3-5, M., W., and F.	Elect. Dist. 55, 3-5, M., W., and F.	Elect. Mach. 53, 2-5, W. and F.
1:00	Des. and Draw. 57, 3-5, Tu., Th. and F.	Des. and Draw. 58, 3-5, Tu., Th. & F.	Des. and Draw. 59, Tu., Th., and F.
	Elect. Const. 17, 2-5, M. and W.	Elect. Const. 18, 2-5, M. and W.	

UNDERGRADUATE CURRICULUM IN MINING ENGINEERING

This is a four-year curriculum leading to the degree of Bachelor of Science in Engineering of Mines.

The object of the curriculum is to prepare young men to take responsible positions in connection with the mining development of the state. The exact requirements for the degree will be modified from time to time to suit conditions.

The degree of Bachelor of Science in Engineering of Mines will be conferred upon any student who satisfies all entrance requirements and receives forty-five credits for the following courses:

Subject	*Course numbers*	*Credit value*
Languages:—		
French, German or Spanish		3
Military Drill		2
Mathematics:—		
Trigonometry	9	1
Algebra	8	1
Analytic geometry	11	1
Differential calculus	15	1
Integral calculus	16	1
Chemistry:—		
Analytic chemistry	4, 5, 7, 10	1 1-2
Physiology:—		
Physiology (First Aid)	2,	1-5
Geology:—		
General geology	2	1
Mineralogy	6, 7	2
Physics:—		
General physics	6, 7, 8	3
Applied electricity	11, 16	2
Mechanics and applied mathematics:—		
Analytic mechanics	2, 3	2
Strength of materials	4	1

Civil engineering:—			
Drawing	10, 11	2	
Descriptive geometry	2	1	
Land, railroad and topographic surveying	4, 5, 6	3	
Masonry construction	19	1	
Roofs and bridges	14	1	
Hydraulics	12		4-5
Mechanical engineering:—			
Mechanical drawing	20, 21, 22	1	1-5
Woodworking	1		2-5
Forging, tinsmithing	6, 9		4-5
Machine work, foundry	10, 7		4-5
Mechanical laboratory	70, 71, 72, 73	1	2-5
Thermodynamics	40	1	
Mechanism	24		3-5
Heat engines	41		3-5
Power plant design	36, 43		9-10
Electrical engineering	66	2	3-5
Mining engineering:—			
Mine visits	1		2-5
Mine surveying	2		2-5
Mining	3, 4, 5	1	4-5
Mine design	6		2-5
Mine laboratory	7		2-5
Mine law	8		1-4
Ore dressing	9		2-5
Metallurgy	10, 11		4-5
Mine operation	12		2-5
Thesis		1	
Total		45	

A student wishing to specialize in geology, mineralogy, chemistry, or some special engineering subject, may with the consent of his class officer and the committee on classification and grades, substitute an equivalent number of courses in one or more of these subjects for certain courses of the above list.

DISTRIBUTION OF THE WORK FOR THE DEGREE OF B.S.E.M.

Each subject is followed by the department number, and the credit value of fractional courses is given.

First Year

Hour	*Fall*	*Winter*	*Spring*
8:30	French 1*	French 2*	French 3*
9:30		Chemistry 2*	Land surveying 4
10:30	Algebra 8	Trigonometry 9	Anal. Geom. 11
11:30	Chemistry 1*	Physiology 2, 1-5	Chemistry 3*
1:30	Mech. Draw. 20, 2-5, W. and F.	Mech. Draw. 21, 2-5, W. and F.	Mech. Draw. 22, 2-5, W. and F.
	Woodworking 1, 2-5, Tu. and Th.	Mach. Work 10, 2-5, Tu. and Th.	
	Forging 6, 2-5, M. and 8:00 S.	Tinsmith 9, 2-5, M. and 8:00 S.	Foundry 7, 2-5, Th. and 8:00 S.
	Military Science, 1-3	Military Science, 1-3	Military Science, 1-3

*The course not presented for admission, is required.

Second Year

8:30	Diff. calculus 15	Int. calculus 16	Mechanics 2
9:30	Physics 6	Physics 7	Physics 8
10:30			Topog. Survey. 6, M., W., and F.
11:30	Des. Geom. 2		
1:30	Anal. Chem. 4, 1-3 Tu. and Th.	Anal. Chem. 5, 1-3, Tu. and Th.	Anal. Chem. 7, 1-3, Tu. and Th.
		Drawing 10	Mine visits 1, 2-5
	Military Science, 1-3	Military Science, 1-3	Military Science, 1-3

*The course not presented for admission, is required.

Third Year

8:30	R. R. surveying 5		Thermodynamics 40
9:30	Mechanics 3	Mechanics 4	Mineralogy 6
10:30		Mechanism 24, 3-5, M., W., and F.	Hydraulics 12, 4-5
11:30	Geology 2	Physics 14	
1:30	Drawing 11, 1-2, W., W., and F.	Drawing 11, 1-2, M., W., and F.	Mine surveying 2, 2-5, W. and F.
8:00 S.	Mach. Lab. 70, 1-3	Power Meas. 71, 1-3	Testing Mat. 72, 1-3

Fourth Year

8:30	Heat engines 41, 3-5, M., W., and F.	Power plant 43, 3-5, M., W., and F. Metallurgy 10, 2-5, Tu. and Th.	Masonry const. 19
9:30	Mining 3, 3-5, M., W., and F.	Mining 4, 3-5, M., W., and F.	Mining 5, 3-5, M., W., and F.
	Ore dressing 9, 2-5, Tu. and Tr.	Mine design 6, 2-5, Tu. and Th.	Mine oper. 12, 2-5, Tu. and Th.
10:30	Roofs and bridges, 14	Power plant 36, 3-10	
11:30		Mineralogy 7	Elect. Eng. 66, 3-5, M., W., and F. Metallurgy 11, 2-5, Tu. and Th.
1:30	Anal. Chem. 10, 1-2, Tu. and Th. Mine law 8, 1-5 Mine lab. 7, 2-5	Mech. lab. 74, 2-5	Thesis 22

CURRICULA FOR GRADUATE STUDENTS IN ENGINEERING

These lead to the professional degrees of Civil Engineer, Mechanical Engineer, Electrical Engineer, and Engineer of Mines, respectively. They consist of eight advanced engineering courses and a thesis, and require one year of resident study and work at the University.

A candidate for a professional degree is required to have completed the prescribed four-year curriculum of undergraduate study in that department of this college in which he proposes to take a degree, or to have completed such a curriculum or its equivalent at some other institution of recognized standing, conferring the same or an equivalent baccalaureate degree. In the latter case, the diploma and other certificates of proficiency should be presented.

There is no fixed curriculum of subjects for any of these degrees, but the curriculum of study or investigation is arranged to suit the needs of each candidate, subject to the rules governing candidates for the degree of Master of Arts as stated in the announcement of the College of Arts and Sciences. Each candidate for a degree must select his major subject in the department in which his degree is to be taken and submit a thesis showing marked attainment in some phase of this subject.

SPECIAL ENGINEERING CURRICULA

1. Elective Groups for Students in other Colleges. Candidates for other than the engineering degrees, and special students in any department of the University, are permitted to elect subjects in the College of Engineering, provided, in each case, they have had the subjects specified as prerequisites. Students who wish to take a general classical or scientific course of study before taking the engineering curriculum are advised to carry their mathematics as far as called for by the engineering curriculum, and to take some of their elective work in the College of Engineering. The engineering instructors will advise them what is best to elect.

Credits are given in the College of Arts and Sciences for the following engineering courses:

	Credit value
Mechanics and applied mathematics:—	
Courses 2, 3, 4, 5, 10, 11, 12	7
Civil engineering:—	
Hydraulics 12	1
Descriptive geometry 2 and 3	2
Stereotomy 13	1
Land surveying 4	1
Drawing (C.E. or M.E.)	2
Mechanical and electrical engineering:—	
Thermodynamics 40	1
Electrical machinery 51, 52, 53	2
Electrical laboratory 60 and 61	1
Mechanical laboratory 70, 71, 72	1
Heating and ventilating 46	1
Mechanical drawing (C.E. or M.E.)	2

In addition to the above a student may elect, with consent of his major instructor,

1. When his major subject is physics:—	
Mechanic arts 1-18	3
Mechanical drawing (M.E. or C.E)	1
2. When his major subject is in education:—	
Mechanic arts 1-18	3
Mechanical drawing (M.E. or C.E.)	2

2. Partial Curricula. Deserving young men who have not the time or are otherwise unable to take a full curriculum, will be allowed to take special or partial curricula, consisting of such studies as they are prepared to take, provided that such curricula shall have been approved by their class officers. For further information see statement of requirements for admission as special students.

3. Manual Training Courses. The first group consists of courses 1, 2, 3, and 5 in mechanical engineering. The second group consists of mechanical drawing, courses 20, 21, 22, and shop practice in wood and metal working courses 1, 2, 3, 5, 7, 8, 9, and 10. These courses aim to present the simple elements of some of the constructive arts which admit of being developed into a logical series of exercises. Their merit is chiefly educational, rather than as possessing any intrinsic value in relation to the several branches of handicraft work from which they are taken. The primary object is the training of the eye to see the form of objects, and of the hand to produce such forms in the materials most commonly used in constructive work. There is sufficient instruction in handicraft work and practice to form a proper foundation for the more advanced work with machine tools in mechanical construction and these courses are therefore required of all students taking the full course in mechanical engineering.

4. Special Courses for Mechanics, etc. Students who wish to become more proficient in the use of tools or who are preparing themselves for positions as foremen in industrial establishments, may take additional work in the shop in which they wish to specialize. Instruction will be given in the maintenance and repair of machinery, and opportunity will be afforded for the construction of new machines and apparatus for the University, as well as the working up in the shops of original designs which have been approved by the head of the department. All students in mechanical engineering are recommended to take advantage of this provision and devote as much time as possible to shops and drawing-room practice.

COURSES OF INSTRUCTION

Each of the courses of instruction offered by the College of Engineering is known as a full course unless otherwise stated; that is, a course of five class exercises a week for one quarter, or their equivalent in laboratory or other practical work.

The following branches of applied science and engineering are represented in the courses offered by the Enginering departments:

Applied mathematics
Civil engineering
Designing
Drawing
Electrical engineering
Experimental engineering
Hydraulic engineering
Mechanics
Mechanic arts
Mechanical engineering
Metallurgy
Mining engineering
Municipal engineering
Railroad engineering
Sanitary engineering
Steam enginering
Structural engineering
Surveying

CIVIL ENGINEERING

Professor Boughton and Professor Morris

2. Descriptive Geometry. Orthographic projections in the four quadrants; problems of the point, line, and plane; tangencies and the development of single-curved surfaces.

Fall, 11:30; Professor Morris, 24 M. H.

3. Descriptive Geometry. Single-curved, double-curved and warped surfaces; intersections, tangencies and developments; shades, shadows and perspective. Lectures and recitations.

Winter, 11:30; Professor Morris, 24 M. H.

4. Land Surveying. Theory and practice of land surveying; magnetic variations; calculating the content; retracing old lines; division of lands; establishment of meridians; care and use of instruments; mapping the survey. Lectures, recitations, and field practice. Spring, 9:30; Professor Morris, 24 M. H.

5. Railroad Surveying. Theory and practice of railroad surveying. Lectures, recitations, field work, and drawing. Searles' Field Engineering. Fall, 8:30; Professor Morris, 24 M. H.

6. Topographical Surveying. Theory and practice of topographic, hydrographic, and barometric surveying. Lectures, recitations, field practice, and map drawing. Prerequisite, course 4. Johnson's Theory and Practice of Surveying.

Spring, Monday, Wednesday, and Friday, 11:30; Wednesday and Friday, 1:30; Professor Boughton, 14 M. H.

7. Railroad Construction and Maintenance. Tunnels, trestles, track-work, earth-work, signalling, graduation, masonry, drawing. Tratman's Track and Track-work.

Winter, 8:30; Professor Morris, 24 M.H.

8. Roads and Pavements. Location, construction, and maintenance; study and comparison of the various types of roads; road-making materials. Lectures, recitations, and field work.
Spring, 11:30; Professor MORRIS, 24 M. H.

9. Drawing. Projections, developments, and intersections; lettering. Thorne's Junior and Intermediate Courses in Drawing.
Winter, 9:30; Professor MORRIS, 30 M. H.

11. Drawing. Examples taken from existing structures; elementary problems in design of structures. Two-fifths credit.
Winter, 1:30; Professor BOUGHTON, 30 M. H.

12. Hydraulics. Theoretic pressure and energy of water; flow of water through orifices and tubes and over weirs; flow in conduits, pipes, canals, and rivers; current meters, water motors, etc. Lectures and recitations. Arranged either for full credit or a four-fifths credit.
Spring, 10:30; Professor BOUGHTON, 14 M. H.

13. Stereotomy. Stone-cutting, plain and decorative. Recitation and drawing-room work. Warren's Stone Cutting. Three-fifths credit.
Fall, Monday, Wednesday, and Friday, 10:30; Professor MORRIS, 30 M. H.

14. Stresses in Roofs and Bridges. Determination of stresses by graphical and analytical methods. Lectures and recitations. Prerequisite, Applied Mechanics 4.
Fall, 10:30; Professor BOUGHTON, 14 M. H.

15. Stresses in Bridges and Arches. Continuation of course 14. Lectures and recitations.
Winter, 10:30; Professor BOUGHTON, 14 M. H.

16. Bridge Design. Detailed designs of bridges and other structures of wood and steel. Must be preceded or accompanied by course 15.
Winter, 1:30; Professor BOUGHTON, 30 M. H.

17. Municipal and Sanitary Engineering. Water supply for municipalities, sewerage systems, sewage disposal, etc. Lectures and recitations. Three-fifths credit.
Fall, Monday, Wednesday, and Friday, 11:30; Professor BOUGHTON, 14 M. H.

18. Railroad Economics. General theory of railroad location;

effects of grades, curvature, and distance on operating expense and revenue; railroad finance and management.

Spring, 10:30; Professor MORRIS, 24 M. H.

19. Masonry Construction. As presented in Baker's Masonry Construction. Prerequisite, Applied Mechanics 4.

Spring, 8:30; Professor BOUGHTON, 14 M. H.

20. General Engineering Construction. Supplementary to other courses of this department. Masonry arches; solid and framed domes; built-up timber beams; trussed timber and steel beams; composite beams; reinforced concrete for beams, columns, retaining walls, arches, dams, etc.; analytical and graphical solution of roof angles and other skew connection work; building superintendence; relative economy of structures of different cost and life. Prerequisite, courses 7, 16, and 19. Spring, 9:30; Professor BOUGHTON, 14 M. H.

21. Thesis. See general description of engineering courses for thesis requirements.

22. Geodesy. Precise and geodetic surveying; reduction of observations by the method of least squares; field exercises in determining azimuth, latitude, and time. Two-fifths credit.

Winter, Tuesday and Thursday, 9:30; Professor BOUGHTON, 14 M. H.

23. Contracts and Specifications. Law of contracts; writing of engineering contracts and specifications; procedure in awarding of contracts; duties of engineer or architect during construction of work under a contract. Two-fifths credit.

Fall, Tuesday and Thursday, 11:30; Professor BOUGHTON, 14 M. H.

24. Structural Engineering. Short course in analysis of stresses in beams and simple trusses of various kinds together with elementary instruction in designing beams, columns, etc., in wood and steel. Lectures and numerous problems. Arranged primarily for candidates for the degree B.S.M.E. but open to any who have had Applied Mechanics 4. Three-fifths credit.

Winter, Monday, Wednesday, and Friday, 9:30; Professor BOUGHTON, 14 M. H.

Advanced courses in hydraulics and bridge design have been given by the head of the department and will be arranged again whenever necessary. Students who desire to specialize in this way

must comply with the conditions laid down on page 132 under the head Undergraduate Curriculum in Civil Engineering.

NOTE:—In the several surveying courses, whether so stated in the announcement or not, there may be field practice on Friday afternoons, or at other times different from the recitation hour, as the instructor may arrange. The student should keep this in mind when selecting courses for any quarter.

MECHANICAL AND ELECTRICAL ENGINEERING AND THE MECHANIC ARTS

Professor JONES, Professor CHURCH, Professor DICKINSON, Mr. GRUMBEIN, Mr. CATHER, and Mr. WEST

Courses in the Mechanic Arts

1. Woodworking. Includes instruction in carpentry, joinery, and other bench work; exercises with the fundamental edge tools in soft and hard woods, and in matching, molding, joining, and making typical framed work; woodturning, comprising the fundamental geomtric forms in soft and hard woods; fitting forms of reversed curves; face plate work, chucking, boring, finishing, and polishing. Three-fifths credit, or nine actual hours per week.

1st section; Fall, Winter, or Spring, Monday, Wednesday, and Friday, 1:00.

Second section; Fall or Winter, Tuesday and Thursday, 1:00, and Saturday, 8:00. Mr. GRUMBEIN, 21 M. H.

2. Woodworking. Advanced work for special students. In this course the student is permitted to specialize along the lines of his choice. The amount of credit to be given depends upon the amount of time spent in the shop and the progress made by the student.

Hours to be arranged; Mr. GRUMBEIN, 21 M. H.

3. Pattern-Making. Applies the foregoing instruction in its relation to patterns for machine construction, considers the types of patterns and usual allowances for draft, shrinkage and finish, with exercises in making patterns of machine elements and other work to be executed in the machine shop. Three-fifths credit, or nine hours per week.

Fall, Winter, or Spring, Tuesday and Thursday, 1:00, and Saturday, 8:00; Mr. GRUMBEIN, 21 M. H.

4. Pattern-Making. A continuation of course 3 for special

students. Credit for this course is given on the basis of time spent in the shop and the progress of the student.

Hours to be arranged; Mr. GRUMBEIN, 21 M. H.

5. Forging. Exercises in drawing out and sizing, forming, welding, and fitting iron; steel forging, tempering, annealing; making typical tools to be used later in the machine shop; manner of working forges; determining quality of iron and steel and strength of the students' welded joints. Two-fifths credit, or six hours per week.

Sophomores; Fall, Monday, 1:00, and Saturday, 8:00; other sections, hours to be arranged; Mr. WEST, 7 M. H.

6. Forging. A continuation of course 5 for special students. Credit is given on the basis of time spent in the shop and the progress of the student. Hours to be arranged; Mr. WEST, 7 M. H.

7. Foundry. Moulding and casting in connection with pattern-making; selection, preparation, and use of moulding, facing, and parting sands; use of typical molder's tools and appliances; making castings from exercise patterns and from those for machine work. Three-fifths credit.

Winter, Tuesday and Thursday, 1:00, and Saturday, 8:00; Mr. WEST and Mr. GRUMBEIN, 8 M. H.

8. Foundry Practice. A continuation of course 7 for special students. Hours to be arranged; Mr. WEST, 8 M. H.

9. Tin-Smithing and Pipe-Fitting. Brazing, tinning, forging, and use of coppers; seamless and solder-jointed work in tin and sheet iron; laying-out, cutting, and forming sheet-metal; electrical fitting; bending and coiling pipe; making joints and use of packing; drilling and tapping for pipe and bolt holes in boiler plate; soft and hard patches; tank and boiler riveting, caulking, and tube expanding. Two-fifths credit, or six hours per week.

Spring, Monday, 1:00, and Saturday, 8:00; Mr. WEST, 7 M. H.

10. Machine Work. Tool smithing, iron work at the bench, chipping, filing, fitting, scraping, polishing; key-seating; formation of straight edges and surface plates; handwork with machine tools, drilling, tapping. Lectures and practical work. Two-fifths credit, or six hours per week.

Winter, Monday, 1:00, and Saturday, 8:00; Mr. CATHER, 11 M. H.

11, 12, 13. Machine Tool Work. A continuation of course 10. Mechanical engineering; machine tool work with drill-press, lathe,

shaper, planer, emery grinder, and milling machine; production of typical details of machine tools and other workshop appliances. Each, two-fifths credit, or six hours per week.

Fall, Winter, and Spring, Tuesday and Thursday, 1:00; Mr. CATHER, 11 M. H.

14, 15, 16. Machine Construction. Reproduction of typical details of steam-engine and other motive-power machinery; work from original designs; manufacture of special apparatus for shop and laboratory use; practice in building, assembling, and erecting workshop and engineering appliances, motive-power machinery and accessories, and attendance on the same. Each, two-fifths credit, or six hours per week.

Fall, Winter, and Spring, Tuesday and Thursday, 1:00; Mr. CATHER, 11 M. H.

17, 18. Electrical Construction. Mechanical repairs to dynamos and motors and setting and adjusting brushes; constructing switches, switch boards, and rheostats; winding coils, wiring for electric light, power and telephone service. Each, two-fifths credit.

Fall and Winter, Monday and Wednesday, 1:00; Professor DICKINSON and Mr. WEST, 4 M. H.

Courses in Mechanical Drawing and Machine Design

20, 21, 22. Mechanical Drawing. Plain lettering, care and use of drawing instruments, selected geometric constructions, line exercises, finished drawing; isometric, cabinet and orthographic projection, working drawings from models and blue prints, tracing, and blue printing; mimeographed notes, blue prints. Each two-fifths credit, or six hours per week.

Fall, Winter, and Spring, Monday, Wednesday, and Friday, 1:00; Professor CHURCH, 25 M. H.

23. Machine Drawing. Working drawings of machine parts from sketches and models. Elective for sophomores. Prerequisite, course 21. One-third credit.

Fall, Friday, 1:00; Professor CHURCH, 25 M. H.

24, 26. Mechanism and Machinery. Analysis and classification of mechanisms, diagrams of relative velocities of machine parts; principles of transmission and change of motion by linkages, rolling contact, tooth gearing, couplings, belting, cams, parallel and straight line motions; classification and analysis of machinery with special attention to workshop appliances, machine tools, and machinery of

transmission. Lectures and recitations. Prerequisite, course 20, and accompanying drawing courses, 25 and 27. Each, three-fifths credit.

Winter and Spring, Monday, Wednesday, and Friday, 10:30; Professor CHURCH, 26 M. H.

25, 27. Mechanism Drawing. Practice accompanying courses 24 and 26. Drawings and diagrams of mechanical movements, graphical solution of problems; design of gear teeth. Each, two-fifths credit, or six hours per week.

Winter and Spring, Wednesday and Friday, 1:00; Professor CHURCH, 25 M. H.

28. Valves, Valve Gears, and Governors. Comparison of valve diagrams; analysis and design of valves, valve gears, and governors. Prerequisite, Mechanical Engineering 27 and Mechanics 2. Lectures, recitations, and accompanying drawing course 29. Three-fifths credit.

Winter, Monday, Wednesday, and Friday, 8:30; Professor CHURCH, 26 M. H.

29. Valves and Valve Gears. Drawing-room practice accompanying course 28.

Winter, Tuesday and Thursday, 1:00; Professor CHURCH, 25 M. H.

30. Machine Drawing. Conventional methods, detail and assembled drawings, tracing and blue printing. Prerequisite, course 22. Two-fifths credit.

Fall, Tuesday and Thursday, 1:00; Professor CHURCH, 25 M. H.

31. Machine Design. Elements of machine design, conventional and rational; adaptation of commercial sizes; proportioning fastenings, flanges, bearings, rotating pieces, connecting links, and machine supports; mechanics of machinery; influence of material and treatment on design. Lectures and recitations. Prerequisite, Mechanics 4 and course 26, Mechanical Engineering, and accompanying drawing course 32. Three-fifths credit.

Spring, Monday, Wednesday, and Friday, 9:30; Professor CHURCH, 26 M. H.

32. Machine Drawing. Drawing-room practice accompanying course 31. Two-fifths credit.

Spring, Tuesday and Thursday, 1:00; Professor CHURCH, 25 M. H.

33. Machine Design. Continuation of course 31. Lectures. recitations, and drawing. Notes, blue prints, and reference works.

Fall, 11:30; Professor CHURCH, 26 M. H.

34. Steam Engine Design. Comparison of rational and empirical formulae; complete design of simple engine. Supplemented by course 35. Lectures and recitations. Printed notes, blue prints, and drawings of best types of modern engines. Three-fifths credit.

Fall, Monday, Wednesday, and Friday, 9:30; Professor CHURCH, 26 M. H.

35. Drawing and Designing. Drawing-room practice accompanying course 34; as far as possible, complete drawings of an engine are made from calculations and designs developed in course 34. Three-fifths credit.

Fall, Tuesday, Thursday, and Friday, 1:00; Professor CHURCH, 25 M. H.

36. Drawing and Designing. Continuation of course 35 and drawing-room and office work accompanying course 43, Mechanical Engineering. References made chiefly to blue prints and mechanical drawings of actual power and manufacturing plants. Two-fifths credit.

Winter, Tuesday. Thursday, and Friday, 1:00; Professor CHURCH, 25 M. H.

37. Drawing and Designing. Continuation of course 36 and specialized engineering drawing. Prerequisite, course 36. Three-fifths credit.

Spring, Tuesday, Thursday, and Friday, 1:00; Professor CHURCH, 25 M. H.

38. Gas Engine Design. Lectures, conferences and drawing-room practice for advanced and graduate students.

Hours to be arranged. Professor CHURCH, 26 M. H.

NOTE:—Students taking the electrical course take designing and drawing courses 57, 58, and 59, instead of 35, 36, and 37.

Courses in Steam Engineering, Manufacturing, Etc.

40. Thermodynamics of Engineering. Mechanical theory of heat, thermodynamics of gases and vapors, with special application to steam and other heat engines, air, and refrigeration. Prerequisites, Mechanics 5 and 6. Lectures and recitations. Peabody's Thermodynamics of the Steam Engine.

Spring, 8:30; Professor JONES, 16 M. H.

41. Heat Engines and Motors. Expansive working of steam and

gas, principles of design, construction and operation of steam engines, air compressors, gas engines, and refrigerating machines. Prerequisite, course 40. Lectures and recitations supplemented by course 73. Three-fifths credit.

Fall, Monday, Wednesday, and Friday, 8:30; Professor JONES, 16 M. H.

42. Steam Boilers. Heating value of fuels, combustion, economical production of steam; application of theory and practice in the design of steam boilers, chimneys, and accessories; steam piping and distribution. Prerequisite, course 31. Three-fifths credit .

Winter, Monday, Wednesday, and Friday, 9:30; Professor CHURCH, 26 M. H.

43. Power Plant Design. Embodies the details of the earlier courses of instruction in prime movers and motive-power machinery in respect to the design of steam and electric power and hydraulic plants for power transimssion and manufacturing purposes; location of the plant; selection, arrangement, subdivision into units and in stallation; economics, organization and management of power and manufacturing plants; engineering specifications. Lectures and accompanying course 36. Three-fifths credit.

Winter, Monday, Wednesday, and Friday, 8:30; Professor JONES, 16 M. H.

44. Power Plant Design. A continuation of course 43 for graduates and advanced students. Lectures, assigned reading, and designing. Hours to be arranged; Professor JONES, 16 M. H.

45. Machinery and Mill Work. Construction of shops and manufacturing plants, arrangement of machines, hoisting and conveying machinery. Lectures, recitations, and designing. Elective for seniors. Winter, 11:30; Professor CHURCH, 14 M. H.

46. Heating and Ventilating. Principles, comparative merits and design of various systems of ventilating, heating by hot air, hot water, steam, electricity. A careful study of the systems in the different University buildings. Prerequisite, Physics 8. Lectures and recitations. Carpenter's Heating and Ventilating Buildings. Elective. Hours to be arranged; Mr. GRUMBEIN, 16 M. H.

47. Materials of Engineering. A study of the various materials used in engineering, the source, manufacture, qualities, cost, etc. Prerequisite, Mechanics 4.

Hours to be arranged; Professor JONES, 16 M. H.

48. Steam Turbines. Flow of saturated and superheated steam and the theory and design of the steam turbine. For advanced and graduate students. Prerequisite, Heat Engines 41.

Term and hours to be arranged; Professor CHURCH, 26 M. H.

49. Gas Engines and Gas Engineering. The study of fuel gases, gas production and transmission, gas engines, etc. For advanced and graduate students. Prerequisite, Heat Engines 41.

Term and hours to be arranged; Professor JONES, 16 M. H.

Courses in Electrical Engineering

For elementary courses in the theory of electricity, see the announcement of the Department of Physics, page 105.

50. Applied Electricity. An elementary course for special students. Management of dynamos and motors, wiring calculations, house wiring and line construction. This course will be given upon the application of four or more students.

Spring, 11:30; Professor JONES, 16 M. H.

51. Electrical Machinery. Principles of design, construction and operation of direct current machinery. Prerequisite, Physics 11 and 12. Three-fifths credit.

Fall, Monday, Wednesday, and Friday, 9:30; Professor DICKINSON, 15 M. H.

52. Electrical Machinery. Principles of design, construction and operation of alternating current machinery. Prerequisite, Physics 11 and 12. Three-fifths credit.

Winter, Monday, Wednesday, and Friday, 9:30; Professor DICKINSON, 15 M. H.

53. Electrical Machinery. Theoretical consideration of the design and performance of alternating current motors. Prerequisite, course 52. Two-fifths credit.

Spring, Wednesday, and Friday, 10:30; Professor DICKINSON, 15 M. H.

54. Electric Power Transmission. Transmission of electrical energy from generating stations to points of distribution for general utilization. Theoretical consideration of underlying principles, practical problems, study of descriptive literature, observation. Prerequisite, Physics 11 and 12. Three-fifths credit.

Fall, Monday, Wednesday, and Friday, 10:30; Professor DICKINSON, 15 M. H.

55. Electrical Distribution. The distribution of electrical energy for use in mines, shops, and factories. Special attention will be given to the application of electricity to mining. Prerequisite, course 54. Three-fifths credit.

Winter, Monday, Wednesday, and Friday, 10:30; Professor DICKINSON, 15 M. H.

56. Electric Lighting and Railways. The distribution and utilization of electrical energy for lighting and traction. Principles of design, construction, installation and operation of electric-lighting and railway units and systems. Three-fifths credit.

Spring, Monday, Wednesday, and Friday, 9:30; Professor DICKINSON, 15 M. H.

57, 58, 59. Designing and Drawing. Designing and drawing dynamos, motors, transformers, switchboards, and power stations. Three-fifths credit, or nine hours a week for each course.

Fall, Winter, and Spring, Monday, Wednesday, and Friday, 1:30; Professors CHURCH and DICKINSON, 25 M. H.

60, 61, 62. Electrical Engineering Laboratory. Practical management of electrical machinery; study of switchboards; calibration of instruments for electrical measurements; investigation of losses in the utilization of electrical energy; study of electrical relations in transmission lines; testing arc and incandescent lighting units and systems; determination of efficiencies and characteristics in laboratory and commercial tests of dynamos, motors, transformers, and other electrical apparatus. To accompany courses 51, 52, and 53. Prerequisite, Physics 11 and 12. Two-fifths credit for each.

Fall, Winter, and Spring, Tuesday, Thursday, or Saturday, 8:00; Professor DICKINSON, 4 M. H.

63. Electrical Research. Laboratory investigations in special lines of electrical studies. For advanced and graduate students.

Hours and credits to be arranged; Professor DICKINSON, 4 M. H.

64. Electrical Engineering. Seminar work for advanced and graduate students. Special topics will be selected for study and discussion.

Hours and credits to be arranged; Professor DICKINSON, 13 M. H.

65. Telephone Engineering. A course for advanced students. Lectures and recitations on the development, physical theory, construction and operation of telephonic apparatus. Three-fifths credit.

Winter, Monday, Wednesday, and Friday, 11:30; Professor DICKINSON, 15 M. H.

66. Electricity for Mining Engineers. The generation and distribution of electric energy and its utilization in lighting and for the various electrically-driven machines used in mining operations. Includes laboratory work. Prerequisites, Physics 14, Mechanism 24, Mech. Lab. 71. Three-fifths credit.

Spring, M., W., and F., 11:30; Professor DICKINSON, 15 M. H.

Courses in Experimental Engineering

70. Mechanical Laboratory. The comparison of experimental results and determination of physical laws from observation; theory, calibration and use of slide rule, planimeters, steam engine indicators, steam gauges, and thermometers; calorimeter tests for testing value of coal and natural gas; testing lubricating oils; analysis of flue gases. Prerequisite, or accompanying, Mechanics 2. Carpenter's Experimental Engineering. One-third credit.

Fall, Saturday, 8:00; or Friday, 1:30; Professor JONES, 10 M. H.

71. Power Measurements. Efficiency tests of simple engines, pumps, dynamos, motors, and machinery of power transmission; measurements of power by Prony brake, rope brake, Alden absorption dynamometer, transmitting dynamometer; steam engine indicator practice and simple valve setting; determination of the quality of steam, test of small steam boiler. Prerequisite, or accompanying, Mechanics 13. One-third credit.

Winter, Saturday, 8:00; or Friday, 1:30; Professor JONES, 10 M. H.

72. Testing Materials of Engineering. Tensile, torsional compressive, and transverse tests of wrought iron, cast iron, steel, and timber; transverse, compressive, and absorption tests of stone, brick, cement, and concrete; also tests for fineness, specific gravity, time of setting, and constancy of volume of cement. Prerequisite, or accompanying, Mechanics 4. One-third credit.

Spring, Saturday, 8:00; or Friday, 1:30; Professor JONES, 10 M. H.

73. Mechanical Engineering Laboratory. Experimental work in thermodynamics, tests of injectors, calorimeters, steam and oil separators, non-conducting coverings; flow and quality of steam, practice in valve setting, behavior of steam in the cylinder; economy tests of hot air engines, steam engines, gas engines and steam

boilers; such other work as may be assigned. Prerequisite, Mechanical Engineering 40. Two-fifths credit.

Fall, 1st section, Saturday, 8:00; 2nd section, Tuesday, 8:30; 3rd section, Thursday, 8:30; other sections as assigned.

Professor JONES and Mr. GRUMBEIN, 10 M. H.

74. Mechanical Engineering Laboratory. Tests of steam heating apparatus; duty trials of steam pumps; efficiency tests of air compressors; hydraulic motors, fans, blowers, etc.; application of Hirn's analysis to the steam engine; flow of water through pipes and orifices, calibration of water meters. Two-fifths credit.

Winter, 1st section, Saturday, 8:00; 2nd section, Tuesday, 8:30; 3rd section, Thursday, 8:30; other sections as assigned.

Professor JONES and Mr. GRUMBEIN, 10 M. H.

75. Mechanical Engineering Laboratory. Combined tests of performances of boilers, engines, electrical and other power transmission machinery; testing of plants away from the University when the opportunity affords; special research work. Prerequisites, Mechanical Engineering 74. Two-fifths credit.

Spring, hours to be arranged; Professor JONES and Mr. GRUMBEIN, 10 M. H.

76. Engineering Laboratory. Commercial tests and research work. For graduates and advanced students. Prerequisites, course 75. Credit will be given on the basis of the time spent in the laboratory and the progress of the student.

Hours to be arranged; Professor JONES, 10 M. H.

For laboratory courses in electrical engineering see courses 60, 61, and 62.

NOTE:—It is not expected that courses marked "hours to be arranged" will be given every year. Students desiring to take such courses should make known the fact to the instructor as early as possible after the beginning of the school year.

MECHANICS AND APPLIED MATHEMATICS

Professor EMORY

1. Elementary Mechanics. The principles of rational mechanics treated without the calculus and from the physical standpoint. For students pursuing the certificate electrical course and those preparing for the work of the artisan, foreman, or draughtsman. Prerequisite, trigonometry. Spring, 10:30; 20 M. H.

2. Statics. A study of the composition of forces, polygon of forces, magnitude and resolution, equilibrium of concurring forces, resultants of parallel forces by analytical and graphical methods, moments of forces, couples, equilibrium of non-concurrent forces, center of gravity and moment of inertia by analytical and graphical methods, the stability of structures, and the stresses in framed and jointed construction. Prerequisite, the calculus.

Fall, 11:30; Spring, 8:30; 20 M. H.

3. Kinetics. Laws of motion, motion in vacuum and in resisting medium, central forces, centrifugal force, the pendulum and governor, impulse, work, energy, power, modulus of machine, kinetic energy of revolving masses, work of variable forces, duty of engines, impressive forces, motion of rigid bodies, fly-wheels, conservation and dissipation of energy. Prerequisite, course 2.

Winter, 11:30; Fall, 9:30; 20 M. H.

4. Applied Mechanics. Strength of materials. Resistance and elasticity of materials, pipes, cylinders and riveted joints, cantilever and simple beams, tension and compression, resilience, shear and torsion, strength of timbers, iron, steel, stone, cement, elastic limits of materials, factors of safety. Design of simple structures. Prerequisite, course 3. Spring, 11:30; Winter, 9:30; 20 M. H.

5. Development and Utilization of Power. Lecture course. A study of the history of the development of the modern pumping engine, railroad locomotive, naval and stationary steam engine, steam turbine, with illustrations and descriptive study of the accessories of these generators. Course arranged for general arts students as well as for engineering students. Required of engineering students; elective for sophomores or seniors. Fall, 8:30; 20 M. H.

6. Development and Utilization of Power. Lecture course. History of the development and present practice in the use of pumps, heaters, condensers, economizers, purifiers, pipe connections, chimneys, boilers ,and other accessories for steam plants, hot air, gas engines, oil engines, wind and hydraulic engines, binary vapor engines, air compressors, and other sources of power. Prerequisite, courses 4 and 5. Winter, 8:30; 20 M. H.

NOTE:—Any one of the following courses or half-courses will be given in any quarter at an hour to be arranged.

7. Development and Utilization of Power. Text-book course. Mathematical study of power, the Clausius, Rankine and physical methods of analysis of power development, measurement of power,

thermodynamics of perfect gases and of vapors, of gas engine and steam cycles, computation of the size and efficiencies of generators, and a complete calculation for power plant to perform some special work, such as water supply, coal handling or other mining operation, etc. Advanced course in power, study of the economical development of power and the designing of power. For graduates. 20 M. H.

8. Materials of Engineering and Construction. Seminary course in the study of the various materials used in engineering, architecture, and manufactures, their occurrence, modes of treatment, uses, costs, efficiency, etc. For engineers and others having preparation. 20 M. H.

9. Building Superintendence and Architectural Engineering. Construction and inspection of foundation, stone, cement, brick work, iron and steel work, carpentry and mill work, roof trusses, roof coverings, cage construction and veneer work for high buildings, preservation of iron work, fire proofing, plastering, inspection of gas fitting, electric wiring, systems of heating, ventilating, etc. For seniors and graduates. 20 M. H.

10. Applied Mathematics. A special course for those making mathematics their major and those who desire a study of its applications to mathematical instruments and appliances and to the methods of analysis. An application of the calculus to mechanics, physics, and exact measurements. Prerequisites, integral calculus. One-half course; may accompany course 11. 20 M. H.

11. Method of Least Squares. Errors of observations; principles of probability, weighs of observations, principle of least squares, probable errors of observations, corrections of observations, normal equations, empirical formulae. For seniors and graduates. Prerequisites, physics and calculus. 20 M. H.

12. Differential Equations. Study of the differential equation of the first order and first degree, first order and higher degrees, including special application to mechanical and physical problems. Prerequisites, calculus. Half course or full course. 20 M. H.

MINING ENGINEERING

Professor BRINSMADE

1. Mine Visits. A study of surface and underground details of several active coal mines near Morgantown, followed by written

reports of observed data. Prerequisites, Physics 7, Drawing 22. Two-fifths credit. Spring, Tuesday and Thursday, 1:30; 16 M. H.

2. Mine Surveying. Surface and underground survey of an active coal mine followed by platting of map from field notes. Methods of sampling and estimation of mineral reserves. Prerequisite, Surveying 4. Two-fifths credit.
Spring, Wednesday and Friday, 1:30; 16 M. H.

3. Mining. Earthwork, rock-boring; rock drills; quarry channellers and gadders; explosives; breaking ground; stability of excavations and their support by timber, steel, and masonry; shaft sinking in hard and soft ground; tunnelling by various timber and shield systems. Prerequisites, Chemistry 4, Physics 8, Geology 2, Mechanics 4, and Mechanical Laboratory 72. Three-fifths credit.
Fall, Monday, Wednesday, and Friday, 9:30; 16 M. H.

4. Mining. Hoisting engines for minerals and men; gravity planes; head frames and tipples; aerial tramways; underground haulage by animals and tractors; drainage and pumps. Prerequisites, same as for Mining 3 with addition of Mechanism 24, Hydraulics 12, and Heat Engines 41. Three-fifths credit.
Winter, Monday, Wednesday, and Friday, 9:30; 16 M. H.

5. Mining. Means of prospecting; classes of mineral deposits and ways of exploitation; coal cutting; special systems for working coal; fires and accidents. Prerequisites, Mining 3 and 4. Three-fifths credit. Spring, Monday, Wednesday, and Friday, 9:30; 16 M. H.

6. Mine Design. The designing of mining equipment to suit practical conditions; ventilation and ventilators. Prerequisites, Mining 3. Parallel course to Mining 4. Two-fifths credit.
Winter, Tuesday and Thursday, 9:30; 25 M. H.

7. Mine Laboratory. Practice and experiments with rock and coal mining machinery; tests of explosives, gases, lamps, etc. Prerequisites, Mechanical Laboratory 72, Physics 8, Chemistry 4. Two-fifths credit. Fall, 1:30 and 8:00, Saturday; 10 M. H.

8. Mine Law. The laws of the United States and of foreign countries relating to mining and mineral lands. Prerequisites, Surveying 4. One-fifth credit. Fall, 1:30; 16 M. H.

9. Ore Dressing. Preparation of coal and other minerals for smelteries or the consumer. Methods of sorting, crushing, grinding, sizing, elevating and conveying; separation by washing or by the dry processes; general arrangement of dressing mill machinery. Prerequisites, Mechanism 24, Hydraulics 12, Physics 8, Mineralogy 6. Two-fifths credit. Fall, Tuesday and Thursday, 9:30; 16 M. H.

10. Metallurgy. Heat measurement; natural fuels; combustion; manufacture of charcoal, peat, and coal briquettes; coke, refined oil, gas and other artificial fuels; fusibility and slags; refractory linings. Prerequisites, Chemistry 4, Physics 8, Geology 2. Two-fifths credit. Winter, Tuesday and Thursday, 8:30; 16 M. H.

11. Metallurgy. Kilns and the burning of brick, lime and cement; reverbatory furnaces and glass-making; blast-furnaces; outline of iron and steel metallurgy. Prerequisite, Metallurgy 10. Two-fifths credit. Spring, Tuesday and Thursday, 11:30; 16 M. H.

12. Mine Operation. Industrial economics; organization and care of labor; mine accounting and cost-keeping systems; examination and evaluation of mines; manager's reports and corporation financing. Parallel course with Mining 5. Two-fifths credit. Spring, Tuesday and Thursday, 9:30; 16 M. H.

NOTE:—The following advanced courses will also be given when there is sufficient demand:

13. Mine Design. Continuation of course 6. Plans for surface and underground development and equipment. Credit and hours to be arranged; 25 M. H.

14. Mine Laboratory. Continuation of course 7. The investigation of special mining problems. Credit and hours to be arranged; 10 M. H.

15. Ore Dressing. Continuation of course 9. Theory and practice of mineral concentration in some detail. Three-fifths credit. Hours to be arranged; 16 M. H.

16. Mill Design. Plans for mineral dressing, coal-washing or cement mills. Prerequisites, Ore Dressing 9. Credit and hours to be arranged; 25 M. H.

17. Metallurgy. Continuation of course 11. The metallurgy of iron and steel in some detail. Two-fifths credit. Hours to be arranged; 16 M. H.

18. Metallurgy. The reduction of non-ferrous metals; including the chief dry and wet processes for gold, silver, copper, nickel, zinc, lead, etc. Three-fifths credit. Prerequisite, Metallurgy 11.
Hours to be arranged; 16 M. H.

19. Electro-metallurgy. The electric processes for the reduction or refining of iron, copper, lead, zinc, aluminum, etc. Two-fifths credit. Prerequisites, Physics 11 and Metallurgy 11. Parallel to Metallurgy 18. Hours to be arranged; 16 M. H.

20. Metallurgy Design. Plans for metallurgical works to suit given technical and economical conditions. Prerequisite, Metallurgy 11. Credit and hours to be arranged; 25 M. H.

21. Metallurgy Laboratory. Experiments in pryometry, combustion, slagging, etc., both in University laboratories and in works near Morgantown. Two-fifths credit. Hours to be arranged; 10 M. H.

22. Thesis. Each candidate for the degree of B.S.E.M. or E.M. is required to prepare a thesis on some technical subject of the mineral industry. It must be fully elaborated and accompanied by the samples and working drawings or models required for a clear presentation.

NOTE:—Courses 3, 4, 5, 9, 10, 11, 16, 17, and 18 are given by lectures and recitations illustrated by blue-prints, catalogues and working models. The students are required to solve many practical problems and to visit those mines and works around Morgantown which are carrying on the processes studied.

THE COLLEGE OF AGRICULTURE.

THE FACULTY

DANIEL BOARDMAN PURINTON, LL.D., *President*

E. DWIGHT SANDERSON, B.S., *Dean*

THOMAS CLARK ATKESON, PH.D., *Professor of Animal Husbandry*

DANIEL WEBSTER WORKING, A.M., *Superintendent of Agricultural Extersion Work*

ARETAS WILBUR NOLAN, A.B., *Professor of Agricultural Education and Forestry*

FREDERICK RANDOM WHIPPLE, M.D.V., *Assistant Professor of Veterinary Medicine*

CHARLES AUGUSTUS LUEDER, D.V.M., *Instructor in Dairying and Veterinary Anatomy*

ISAAC S. COOK, *Assistant Professor of Agronomy*

————————————, *Assistant Professor of Horticulture*

ALEXANDER REID WHITEHILL, PH.D., *Professor of Chemistry*

SAMUEL B. BROWN, A.M., *Professor of Geology*

BERT HOLMES HITE, M.S., *Professor of Agricultural Chemistry*

ROBERT ALLEN ARMSTRONG, A.M., *Professor of English Language and Literature*

FREDERICK WILSON TRUSCOTT, PH.D., *Professor of Germanic Languages and Literatures*

JOHN LEWIS SHELDON, PH.D., *Professor of Botany and Bacteriology*

FREDERICK LAWRENCE KORTRIGHT, D.Sc., *Professor of Chemistry*

JOHN ARNDT EIESLAND, *Professor of Mathematics*

ALBERT MOORE REESE, PH.D., *Professor of Zoology*

EDWIN FAYETTE CHURCH, M.S., *Professor of Machine Design*

CHAUNCEY WILLIAM WAGGONER, PH.D., *Professor of Physics*

WAITMAN BARBE, LITT.D., *Professor of English*

ENOCH HOWARD VICKERS, A.M., *Professor of Economics and Sociology*

WILLIAM JACKSON LEONARD, *Associate Professor of Fine Arts*

DAVID DALE JOHNSON, A.M., *Assistant Professor of English*

JOHN B. GRUMBEIN, B.S.M.E., *Instructor in Mechanical Engineering and Foreman of Wood Shop*

THOMAS HOWARD CATHER, *Instructor in Machine Shop and General Foreman of Shops*

AIM AND SCOPE

This College offers to students a training designed to fit them for the practice of agriculture, while opportunity for general culture is also offered. Its object is the training of students to be not only progressive farmers, but good citizens and successful business men as well.

The technical portion of the courses offered in this College constitutes about one-half of the entire work of the student. In studying these technical subjects, the aim is to make plain the principles of of agricultural science, and to give such practical instruction as conditions and facilities will permit.

EQUIPMENT

The class rooms and laboratories of the College of Agriculture are in Martin Hall. On the basement floor are a modern farm dairy and creamery laboratory, a milk testing laboratory, and a horticultural laboratory. On the first floor are recitation rooms and offices for the various departments. A large laboratory for work in agronomy is now being installed on this floor and will be ready for use in September. All the laboratories are equipped with the necessary scientific apparatus.

The laboratories and apparatus of the scientific departments of the University, and the libraries of the Agricultural Experiment Station and University are at the command of the students in the College of Agriculture.

The farm of the Agricultural Experiment Station, together with its gardens, experiment plats, laboratories, and collections, are available for students desiring to acquaint themselves with the practical and scientific methods of conducting agricultural operations, and to investigate scientific questions relating to the progress and developments of agriculture. The farm is equipped with barns, stables, and other buildings, and presents a variety of soils and conditions existing upon many of the farms of the state. Upon this farm are kept different varieties of farm animals and the most improved agricultural implements. Facilities are provided for studying the most economical methods of handling live stock and their products, including poultry.

ENTRANCE REQUIREMENTS

For admission to the College of Agriculture, the candidate must have credit for fourteen units, obtained by examination or on certificate from a duly accredited secondary school.

Of the fourteen units which must be offered for admission to the course leading to the degree of Bachelor of Arts, nine are definitely prescribed as follows:

	Units
English	3
French, German, or Latin	2
History	1
Mathematics	2
Algebra ..... 1 Plane geometry 1	
Science	1
The unit offered may be either physics, chemistry, botany, zoology, or botany and zoology.	
Total prescribed	9

The remaining five units must be chosen as electives from the list given on page 56. A detailed statement of the work required for each unit of required and elective work is given on page 37.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

CREDITS REQUIRED

The degree of Bachelor of Science in Agriculture will be conferred upon any student who satisfies the above entrance requirements, and who receives forty-five credits for college courses and a satisfactory thesis.

REQUIRED AND ELECTIVE COURSES

Of the forty-five credits required for the degree thirty-seven are definitely prescribed as indicated in the curriculum given below. Students not required to take work in military science must offer two additional elective credits to make up the total of thirty-five. To receive the remaining eight credits elective courses may be offered. Courses amounting to six credits in all must be elected from the technical courses given in the College of Agriculture and courses amounting to at least three credits must be taken in the same subject or department in which the student is to prepare his thesis. Courses amounting to two credits in all must be elected from the courses given in the College of Arts and Sciences.

CLASS OFFICER

The Dean of the College of Agriculture will act as class officer and adviser for all candidates for the degree.

THESIS

Every candidate for the degree of Bachelor of Science in Agriculture will be required to prepare a thesis on some subject relating to a special branch of agriculture or other department of science applied to agriculture. The thesis must be based upon the students' individual practical work. The subject of the thesis with the approval of the head of the department in which it is to be taken must be presented in writing to the Dean not later than November 1st of the school year in which the student is a candidate for a degree. The completed thesis must be presented to the head of the department concerned for his approval not later than thirty days prior to Commencement

Day. For general university regulations concerning form of thesis see page 45.

CURRICULUM FOR THE B.S.AGR. DEGREE

Courses in the College of Agriculture

Subject	*Course numbers*	*Credit value*
Agronomy:—		
Farm crops	1	3-5
Soils	2	3-5
Grain judging	3	1-5
Farm machinery	4	1-5
Farm equipment	5	4-5
Animal Husbandry:—		
Breeds of live stock	1	3-5
Feeds and feeding	3	4-5
Chemistry:—		
Agricultural chemistry	25	3-5
Dairying:—		
Farm dairying	1	1
Entomology:—		
*General entomology	1	1
Economic entomology	3	1
Farm management:—		
Farm management	1	3-5
Agricultural economics	2	1
Horticulture:—		
Orchard fruits	3	4-5
Market gardening	4	1
Evolution	6	1
Veterinary science:—		
*Anatomy and physiology	31	1
Thesis		1
Elective		6

Courses in Other Colleges

Botany:—			
General botany	3, 4		2
*Plant physiology	6		1
*Plant pathology	7		1
Chemistry:—			
Inorganic chemistry	1, 2		2
Organic chemistry	3		1
Qualitative analysis	4, 5, 6		1
Economics:—			
Principles of economics	1		1
English:—			
Composition and rhetoric	10, 11		2
Survey of English literature	36		1
Fine arts:—			
Elementary drawing	16		2-5
German:—			
Elementary German	1, 2, 3		3
Mathematics:—			
Advanced algebra	8		1
Trigonometry	9		1
Mechanical engineering:—			
Woodworking	1		2-5
Mechanical drawing	20		2-5
Physics:—			
Elementary physics	1, 2, 3		3
Zoology:—			
Animal biology	1		1
*Vertebrate zoology	2, 3		2
†Military science	1 to 6		2
Electives (College of Arts and Sciences)			2
Total			45

*Either course of each of the following groups of two courses

may be chosen as the student may desire: Veterinary science 31 or Botany 7; Zoology 2 or Botany 6; Zoology 3 or Entomology 1.

†Students who do not take military science (see page 195) must offer two additional credits for elective courses in place of the two credits in that subject.

SCHEDULE OF COURSES IN AGRICULTURAL CURRICULUM

Freshman Year

Hour	*Fall*	*Winter*	*Spring*
8:30	Agronomy 1, 3-5, Tu. and W.		Agronomy 2, 3-5, Tu. and W.
9:30	Chemistry 1	Chemistry 2	Chemistry 3
10:30	Mathematics 8	English 11	
11:30	English 10	Animal husbandry 1, 3-5, Tu. and W.	Mathematics 9
1:30	Fine Arts 16, 2-5, M. and W.	Chemistry 2 lab., M.	Chemistry 3 lab., M.
		Animal husbandry 1 lab., Th.	Agronomy 2 lab., Tu.
	Agronomy 1 lab., Tu.	Woodworking 1, 2-5, W. and F.	Mech. Engineering 20, 2-5,W. and F.
4:00	Military science, 1-3	Military science, 1-3	Military science, 1-3

Sophomore Year

8:30	Physics 1 Agronomy 3, 1-5, Tu.	Physics 2	Physics 3
9:30	Botany 3 Agronomy 3, cont.	Botany 4	Dairy 1, Tu. and Th.
10:30	German 1	German 2	German 3
11:30	Horticulture 3, 4-5, Tu. and W.		Horticulture 4, M., W., and F.
1:30	Physics 1 lab., Th. Botany 3 lab., M., W., and F. Horticulture lab., Tu. and 8:00 S.	Physics 2 lab., Th. Botany 4 lab., M., W., and F.	Physics 3 lab., M. Dairy 1 lab., Tu., Th., and 8:30 S. Horticulture 4 lab., W. and F.
4:00	Military science, 1-3	Military science, 1-3	Military science, 1-3

Junior Year

8:30	Zoology 1, M., W., and F.	†Zoology 2, M. and W.	*Zoology 3, M. and W.
		Agronomy 4, 1-5, S.	*Entomology 1
9:30	Agricultural elective	Agricul. elective	Agricultural elective
10:30	Animal husbandry 3, 4-5	Farm man'gem'nt 1, 3-5, Tu., Th., & F.	Agronomy 5, 4-5, Tu., Th., F., and 8:30 S.
11:30	Agr. chemistry 25, 3-5, Tu., Th., and F.	†Botany 6	*Vet. science 31
			*Botany 7
1:30	Zoology 1, lab., Tu. and Th.	Zoology 2 lab., M., Tu., and Th.	Zoology 3 lab., M., Tu., and Th.
		Botany 6 lab., Tu. and Th.	Entomology 1 lab., M.
	Chemistry 4, 1-3, W. and F.	Chemistry 5, 1-3, W. and F.	Chemistry 6, 1-3, W. and F.
			Botany 7 lab., Tu. and Th.

†Elect either Zoology 2 or Botany 6.
*Elect either one of the two courses given at this hour.

Senior Year

8:30	Economics 1	Agricul. elective	English 36
9:30	Agricultural elective	Agricul. elective	Agricultural elective
10:30	Entomology 3, M., Tu., and W.	Horticultural 6	Farm management 2
11:30	Elective in College of Arts and Sciences	Elective in Coll. of Arts & Sciences	
1:30	Entomology lab., M. and W.	Thesis, 2-5	Thesis, 3-5

NOTE:—Students who wish to elect Bacteriology 3 in the spring quarter at 8:30 will be allowed to substitute another elective course in English in place of English 36.

ELECTIVE COURSES IN AGRICULTURE

For Juniors and Seniors

Fall Quarter

Forestry 2, Silviculture, 9:30, Tu. and Th.; 1:30, M., W., and Fri.
Horticulture 7, Viticulture and Small Fruits, 9:30 or
Horticulture 8, Systematic Pomology and Commercial Orcharding, 9:30
Horticulture 7 and 8 are given in alternate years.

Veterinary Science 32, 9:30
Animal Husbandry 4, Livestock Management, 9:30
Agronomy 6, Advanced Agronomy, 9:30, Tu., W., and Th.; 1:30, Th. and Fr.

Winter Quarter

Forestry 3, Conservation, 2-5, 9:30, Tu. and W.
Forestry 4, Wood Technology, 3-5, 1:30, Tu., W., and Th.
Horticulture 5, Landscape Gardening, 9:30
Dairying 2, Advanced Dairying, 9:30
Farm Management 3, Advanced Farm Management, 9:30
Farm Management 4, History of Agriculture, 11:30
Animal Husbandry 5, Advanced Animal Husbandry, 9:30
Bacteriology 1, General Bacteriology, 8:30

Spring Quarter

Forestry 6, Forest Mensuration and Management, 9:30, Tu. and Fri.; 1:30, M., W., and Th.
Horticulture 11, Evolution and Improvement of Plants, 8:30
Horticulture 9, Advanced Gardening, 9:30, or
Horticulture 10, Commercial Orcharding, 9:30
Horticulture 9 and 10 are given in alternate years.
Dairy 5, Dairy Cattle, M., W., and F., 9:30; W. and F., 1:30
Animal Husbandry 7, Sheep and Hogs, 9:30, or
Animal Husbandry 6, Beef Cattle, 9:30
Animal Husbandry 5 and 6 are given in alternate years.
Animal Husbandry 2, Breeding Live Stock, 8:30
Bacteriology 2, Agricultural Bacteriology, 8:30

TRAINING FOR TEACHERS OF AGRICULTURE

Students who desire preparation for teaching agriculture in the schools of West Virginia may secure a state teachers' certificate in addition to the degree of Bachelor of Science in Agriculture by taking the regular curriculum outlined above with the substitution of courses 1, 2, 3, 4, 5, and 16 in Education in place of six of the elective courses in the junior and senior years.

AGRICULTURAL EXTENSION DIVISION

Professor Working, Superintendent

It is the purpose of the University to become increasingly useful to all citizens of the state who desire to make use of the work it may be able to offer. The Department of Agricultural Extension is a department of the College of Agriculture devoted to agricultural education throughout the state. Its work will be conducted principally through the following means:—

1. **Agricultural Schools,** conducted at suitable centres for one to two weeks.
2. **Correspondence and Reading Courses** for farmers, teachers, granges and study clubs.
3. Encouraging the teaching of agriculture in the country schools by,
   (a) Lectures at Teachers' Institutes
   (b) The monthly bulletin, West Virginia School Agriculture
   (c) Organizing County Boys' Corn Clubs, and corn growing and judging contests.
4. **Demonstrations and Cooperative Experiments,** such as demonstrations in the spraying and pruning of fruit trees; the culture of corn and other crops; herd testing, etc.
5. **Correspondence.** The department will answer inquiries concerning agricultural problems, and will serve as a bureau of information upon all matters related to agriculture and country life.

The department will be at the service of school officers and teachers who desire to introduce the teaching of agriculture into the elementary and high schools. It invites correspondence from those who are interested in the movement to make the schools, especially those of the rural districts, more directly helpful to the people on the farms by giving them a more sympathetic insight into the vital problems of agricultural production and country life.

COURSES OF INSTRUCTION

Only the technical courses offered primarily for the students in agriculture are described here. For detailed description of the other courses listed on page 171 as required or elective in the agricultural curriculum see the announcement of courses in the College of Arts and Sciences and the College of Engineering.

Courses marked by a star may be offered for credit in the College of Arts and Sciences.

AGRONOMY

Assistant Professor COOK

*1. **Farm Crops.** Lectures and recitations on the production, cultivation, marketing and history of cereals; forage, and miscellaneous crops. Practice with growing and dried crops and their products in the field and laboratory. Required of freshmen. Three-fifths credit. Fall, Tuesday and Wednesday, 8:30; Tuesday, 1:30; 3 M.

*2. **Soils.** Lectures and recitations upon the formation, kinds, and physical properties of soils; the movements and conservation of soil moisture; the relation of heat and air to soil; the nature and physical effects of tillage and fertilizers; laboratory work and experimentation with soils to show the physical effects of different conditions and texture. Required of freshmen. Three-fifths credit.

Spring, Tuesday and Wednesday, 8:30; Tuesday, 1:30; 3 M.

3. **Grain Judging.** Practice work in judging grains. Prerequisite, Agronomy 1. Required of sophomores. One-fifths credit.

Fall, Tuesday, 8:30 to 10:30; 3 M.

4. **Farm Machinery.** A study of the construction and operation of farm machinery, including gasoline engines, water wheels, power transmission, farm lighting systems, hydraulic rams, pumps, spray nozzles, spraying outfits, soldering and pipe fitting, implements of tillage, seeding and harvesting. Required of juniors. One-fifth credit.

Winter, Saturday, 9 to 12; 3 M.

5. **Farm Equipment.** Lectures and recitations upon the equipment of farms; fencing; drainage; wells; implements; silo and barn construction; concrete work; roads, etc. Exercises in leveling and laying out drains, the preparation of farm and building plans. Required of juniors. Four-fifths credit.

Spring, Thursday, Friday, 10:30; Saturday, 8:00 to 12:30; 3 M.

6. **Advanced Agronomy.** Lectures, recitations, laboratory practice, and reports upon farm crops. A continuation of Agronomy 1. Prerequisite Agronomy 1, 2, 3.

Fall, Tuesday, Wednesday, and Thursday, 9:30; Tuesday and Friday, 1:30; 3 M.

ANIMAL HUSBANDRY

Professor ATKESON

1. **History and Characteristics of Breeds.** This course deals with all the improved breeds of live stock. The origin, development, distribution, and characteristics of each breed will be studied. Practice in stock judging. Opportunity to study the various types of living animals will be given as far as possible. Required of freshmen. Three-fifths credit.

Winter, Tuesday and Wednesday, 11:30; Thursday, 1:30; 7 M.

2. Animal Breeding. What is meant by breeding; how to attain the ideal; heredity; atavism; variation; selection; correlation; and in-breeding; cross breeding and grading; influence of climate and environment upon habits and development. The application of the principles studied in Horticulture 3 to animal breeding. Prerequisite, Horticulture 3, Animal Husbandry 1. Spring, 8:30; 7 M.

3. Feeds and Feeding. Laws of animal nutrition, composition and digestibility of feeding stuffs; feeding farm animals; feeding for milk, muscle, and fat; sources of food; how animals use food; influence of food on animal form; study of rations and feeding standards. Required of juniors. Four-fifths credit. Fall, 10:30; 7 M.

4. Live Stock Management. Care of domestic animals in barn and field; the management of flocks and herds; the care of work animals and driving horses. Prerequisites, Animal Husbandry 1 and 2. Fall, Monday, Wednesday and Friday 9:30; Tuesday and Thursday 1:30; 7 M.

5. Advanced Animal Husbandry. Advanced work in animal husbandry arranged to meet the needs of the student. Prerequisite, Animal Husbandry 3 and 4. Winter, 9:30; 7 M.

6. Beef Cattle. A systematic study of the most successful and economical methods of producing beef cattle, including a study of their types, fitting for market and marketing. Prerequisites, Animal Husbandry 1, 3, and 4. Alternate with course 7. Omitted in 1911-1912. Spring, 9:30; 7 M.

7. Sheep and Hogs. A study of the different breeds according to their official standards, their origin, history and adaptation to different conditions of climate and soil; the best methods of producing wool, mutton and pork. Prerequisite, Animal Husbandry 1, 3, and 4. Alternate with course 6. Spring, 9:30; 7 M.

AGRICULTURAL CHEMISTRY

Professor HITE

25. Agricultural Chemistry. A course of lectures discussing as far as possible the more instructive and important appliances of chemistry to agriculture, but having to do primarily with the maintenance of soil fertility. Required of juniors. Prerequisites, Chemistry 1, 2, and 3. Fall, 11:30; Experiment Station.

DAIRYING

Mr. LUEDER

1. Farm Dairying. This course consists of lectures and laboratory work, giving a practical knowledge of the care and handling of milk; composition of milk; tests for butter fat with Babcock Test; separators; separation of cream; ripening of cream; churns and churning; working, salting and packing of butter for market. Required of sophomores.

Spring, Tuesday and Thursday, 9:30 and 1:30; Saturday, 8:30-12:00; 22 M.

2. Advanced Dairying. Lectures on the growing crops for dairy cattle; feeding for milk production; the marketing of dairy products; dairy sanitation, etc. Prerequisites, Dairying 1, Animal Husbandry 3, Veterinary Science 1. Winter, 9:30 and hours to be arranged; 22 M.

5. Dairy Cattle. A study of each of the improved dairy breeds is taken up with special reference to families and individuals. Tracing of pedigrees; requirements for advanced registry and the methods of making tests for official records are studied. Afternoon practice in judging dairy cattle. Prerequisites, Animal Husbandry 3, Veterinary Science 1.

Spring, Monday, Wednesday, and Friday, 9:30; Wednesday and Friday, 1:30; 22 M.

ENTOMOLOGY

Associate Professor NOLAN

***1. General Entomology.** A general survey of the structure, classification and habits of insects. Lectures and recitations, laboratory dissections, and the classification of the student's collection. Prerequisites, Zoology 1. Spring, 8:30 and Monday 1:30; 27 M.

3. Economic Entomology. Insects of economic importance; their life histories and habits as related to their control; with special consideration of general farm methods for the control of insects affecting staple crops, and of spraying machinery and insecticides for combating fruit and truck insects. Prerequisites, Zoology 1, and Entomology 1, if possible. Required of seniors.

Fall, Monday, Tuesday, and Wednesday, 10:30; Monday and Wednesday, 1:30; 27 M.

FARM MANAGEMENT

Assistant Professor COOK

*1. **Farm Management.** Lectures and recitations on farm accounting, selection and purchase of farms, cost and relative profit of various farm operations and systems of farming, organization of the farm business with preparation of plans for the management of specific farms, with financial estimates. Required of juniors. Three-fifths credit. Winter, Tuesday, Thursday, and Friday, 10:30; 3 M.

2. **Agricultural Economics.** A study of the general economic problems of agriculture. Prerequisites, Farm Management 1, and Economics 1. Required of seniors. Spring, 10:30; 3 M.

3. **Advanced Farm Management.** A further study of farm management, including lectures, problems, reading, and trips to successful farms. Prerequisite, Farm Management 1. Winter, 9:30; 3 M.

4. **History of Agriculture.** A general history of agriculture, beginning with ancient times and tracing the history of agriculture, agricultural methods, and the development of trade and commerce through all the ages to the present; a special study of present practices and methods of competing with foreign countries. Lectures and recitations. Winter, 11:30; 3 M.

FORESTRY

Associate Professor NOLAN

*2. **Silviculture.** A practical study of the factors governing forest growth and distribution; forest regeneration and culture; methods of cleaning, thinning and cutting. Constant practice in identifying trees and shrubs. Lectures, recitations and practical work in woodlot. Prerequisites, Botany 1, 2, and 3.

Fall, Monday and Friday, 9:30; Tuesday, Wednesday, and Thursday, 1:30; 27 M. and woodlot.

3. **Conservation.** Relation of the state to natural resources, factors of forest production and economic aspects. Forest policies. Special assigned topics for investigation; forest conservation; water power and water sites; irrigation; soil conservation; phosphate deposits; climate and stream flow, etc. Lectures and recitations. Prerequisite, Forestry 1. Two-fifths credit.

Winter, Monday and Friday, 9:30; 27 M.

4. Wood Technology. Study of tissues, leading to the identification of the economic woods of the state, and the more exotic species. Structural, physical, mechanical, and chemical properties of wood, and the influences determining the same; uses to which woods are best suited; diseases and faults of wood. Laboratory work. Mill visitations and class-room demonstrations. Prerequisite, Forestry 1. Three-fifths credit.

Winter, Tuesday, Wednesday, and Thursday, 1:30; 27 M.

6. Forest Mensuration and Management. A study of the methods of management of forest property by national, state, corporate and individual owners. Forest protection. The course includes practical work in cruising and estimating standing timber. The student is required to prepare a working plan of an assigned tract of timber. Prerequisite, Forestry 1, 2, and 3.

Spring, Tuesday and Friday, 9:30; 27 M.

Practical work in forest, Monday, Wednesday, and Thursday, 1:30.

HORTICULTURE

Assistant Professor ————

***3. Practical Pomology.** The planting and management of orchards and small fruit plantations. A practical course on varieties, soils. and preparation of soils, planting, cultivating, harvesting, storing, grading, and marketing. Required of sophomores. Four-fifths credit.

Fall, Tuesday and Wednesday, 11:30; Tuesday, 1:30; Saturday, 8:30-12:00; 27 M.

***4. Market Gardening.** A study of commercial vegetable growing. The construction and management of hot beds and cold frames, starting early vegetables under glass, sowing and planting in the open ground, systems of cropping, methods of tillage, garden irrigation, tillage, grading, packing, and marketing. Required of sophomores.

Spring, Monday, Wednesday, and Friday, 11:30; Monday and Wednesday, 1:30; 27 M.

6. Evolution. Lectures and recitations upon the problems of variation, heredity, breeding, and selection, from an experimental standpoint, and discussions of recent theories with their bearing on the question of evolution. Laboratory work upon variation. This course is a basis for advanced work in plant and animal breeding. Required of seniors.

Winter, Tuesday, Wednesday, and Thursday, 10:30; 27 M.

7. Viticulture and Small Fruit Culture. A comprehensive study of the grape and the small berry fruits. Each fruit is studied with reference to its history, classification, varieties, propagation, planting, pruning, enemies, diseases, picking and marketing. Prerequisite, Horticulture 1. Given in alternate years with Horticulture 9.
Fall, 9:30; 27 M.

8. Systematic Pomology and Commercial Orcharding. The first half of the term is devoted to a study of the leading varieties of fruit and their adaptation to different conditions in West Virginia. The remainder of the term is devoted to a consideration of commercial orchards, problems of marketing, packing, transportation, and co-operation. Lectures, reference reading, and laboratory work. Prerequisite, Horticulture 1. Given in alternate years with Horticulture 10.
Fall, 9:30; 27 M.

5. Landscape Gardening. An elementary course in ornamental and landscape gardening, with special reference to the beautifying of home surroundings. Lectures and laboratory work.
Winter, 9:30; 27 M.

9. Advanced Gardening. The management of commercial vegetable gardening establishments; rotation of crops, manures, markets and special crops. Prerequisite, Horticulture 2. Given in alternate years with Horticulture 8.
Spring, 9:30; 27 M.

10. Commercial Orcharding. A continuation of course 5. The storing and marketing of fruit; a discussion of storage houses; the handling and storing of fruits; fruit packages; methods of grading and packing, etc. Lectures, reference reading, and laboratory exercises. Prerequisite, Horticulture 5. Given in alternate years with Horticulture 7.
Spring, 9:30; 27 M.

11. Evolution and Improvement of Plants. The application of the principles of evolution to the improvement of plants. Variation, selection and heredity as applied to the problems of practical plant breeding. Prerequisite, Horticulture 1, 2, and 3.
Spring, 8:30; 27 M.

VETERINARY SCIENCE

Mr. LUEDER

31. Anatomy and Physiology. A systematic description of the bones, muscles, viscera, vascular, lymphatic and respiratory system. The structure of the ox, sheep and pig, as contrasted and compared

with that of the horse. The functions of the various organs and tissues of the body, the chemical constitution and physical laws which effect its growth, reproduction, and development. Prerequisites, Zoology 1, 2, and 3. Spring, 11:30 and hours to be arranged; 8 M.

32. Diseases of Farm Animals and Materia Medica. This course includes the study of the important diseases of domestic animals, together with that of drugs for the cure of disease. Practical work in compounding and administration of medicines. Prerequisite, Veterinary Science 1.

Fall, Monday, Tuesday, and Wednesday, 9:30; Tuesday and Friday, 1:30; 8 M.

THE COLLEGE OF LAW.

THE FACULTY

DANIEL BOARDMAN PURINTON, LL.D., *President*

CHARLES E. HOGG, LL.D., *Dean and Professor of Common-Law Pleading, Court Practice and Federal Procedure*

WILLIAM P. WILLEY, A.B., A.M., *Professor of Equity Jurisprudence and Commercial Law*

JAMES RUSSELL TROTTER, A.M., PH.D., *Professor of Law*

URIAH BARNES, LL.B., *Assistant in Law*

HISTORY

The College of Law was established in 1878. Since then the growth of this department has kept pace with that of the University, of which it is a part, and now its attendance is comparatively large. The College of Law now occupies four commodious lecture rooms, a reading room, and a library, to which students have free access. In 1890 the moot court was introduced as a part of the regular law course.

LAW LIBRARY

The Law Library now contains about forty-five hundred volumes of well selected books. These consist of the official editions of the United States Supreme Court Reports, and the reports of the states of Massachusetts, New York, Pennsylvania, Virginia and West Virginia complete, and all of the other states to the Reporter System complete with the exceptions of Maryland, South Carolina, Maine, Rhode Island, Deleware and New Hampshire. The Law Library also contains the American Decisions, American Reports, Corporation Reports Annotated, Lawyers Reports Annotated, old and new series, American Probate Reports Annotated, and a large number of well selected text-books. It is in charge of a competent librarian and is

open to the students of the University from eight a. m. to five p. m., and also from seven p. m. to nine p. m. In addition to this the Dean of the College of Law has placed his own library, consisting of nearly twenty-four hundred volumes, in his lecture room, to which the students have free access. This is a well kept, up-to-date private library, containing a large number of text-books, digests, encyclopedias and reports. There is a complete set of the Reporter System, state and federal, including those contained in the Dean's room and in the Law Library.

Arrangements have been made whereby the use of these two libraries is extended to the lawyers of the state by the payment of a small annual fee, the proceeds thus derived to be expended in the purchase of law books, as the property of the state.

CURRICULA OFFERED IN THE COLLEGE OF LAW

1. A curriculum leading to the degree of Bachelor of Laws.
2. A curriculum leading to the degree of Master of Laws.

ADMISSION

The requirements for the admission of students who are candidates for the degree of Bachelor of Laws, are the same as for candidates for the degree of Bachelor of Arts. See page 56.

Conditional Admission. Students who have not had opportunity to make the preparation required for admission may enter the Preparatory School of the University and complete their preparation. If a student lacks no more than one unit of the necessary preparation he may be admitted conditionally and complete his preparation while carrying on some of the studies of the first year of the law course.

Admission as Special Students. Persons desiring to enter as special students in the College of Law must conform to the regulations of the university concerning special students.

Master of Laws. To enter upon the curriculum leading to the degree of Master of Laws the candidate must have received the degree of Bachelor of Laws from this university or from some other law school of equal grade.

DEGREES

BACHELOR OF LAWS

The degree of Bachelor of Laws will be conferred on any student who satisfies all entrance requirements and receives either thirty-one

credits for college courses as designated in the first three years of the curriculum given below or thirty credits for college courses as designated in the last three years of the curriculum.

Any law student who under existing regulations can secure the degree of LL.B. by accomplishing twenty credits shall be ranked as a Junior in the College of Law. Any student below the rank of Junior will be required to secure one additional credit for work in military science unless exempt under the provisions stated on page 195.

The professional courses required for the degree of Bachelor of Laws are all prescribed and must be taken in the order designated below unless special permission is obtained to vary that order. Students may, however, enter at the beginning of any quarter and obtain credit for the subjects taught in that quarter.

A degree will not be granted to any student who has not been in actual attendance upon the lectures during the whole of the last year's work required for the degree.

CURRICULUM IN THE COLLEGE OF LAW

Academic Year

English: Courses 10 and 11—2 credits.
History: Courses 20, 22, and 23—3 credits.
Elective: Courses in College of Arts and Sciences—6 credits.

First Year in Law

Hour	*Fall*	*Winter*	*Spring*
8:30	Domestic relations 1	Insurance 5, 1-2 Agency 4, 1-2	
9:30	Contracts 2	Negotiable instruments 6	Torts 9
10:30		Real property 7	Real property 10
11:30	Criminal law 3	Crim. procedure 8	Evidence 11

Second Year in Law

8:30			Sales 19
9:30	Corporations 12	Constitutional law 15, 1-2 Partnership 16, 1-2	Bailments and carriers 20
10:30	Common law pleading 13		Wills and administrations of estates 21
11:30	Equity pleading and jurisprudence 14	Equity pleading and jurisprudence 17	
2:30		Court practice 18	Court practice 22

Third Year in Law

8:30	Courts and officers 23	Corporations 29, 1-4
		Federal procedure 30, 1-2
		Bankruptcy 31, 1-4
9:30	Actions and defenses 24	Legal documents 26
10:30	Elocution 6	Philosophy 3
11:30	Court proceedings 27	Court proceedings 32
2:30	Court practice 28	Court practice 33

MASTER OF LAWS

Candidates who present eleven credits for courses in the College of Arts and Sciences and twenty credits for courses in law in satisfaction of the requirements for the degree of Bachelor of Laws may offer the third year courses as scheduled above in satisfaction of the requirements for the degree of Master of Laws.

CREDIT TOWARDS THE DEGREE OF BACHELOR OF ARTS

The following courses in law may be counted toward the degree of Bachelor of Arts:

Domestic relations	1
Contracts	2
Criminal law	3
Constitutional law	15
Real property	7

EXAMINATION FOR ADMISSION TO THE BAR

It is made the duty of the law faculty according to the laws of the state to examine all applications for admission to practice law. These examinations are held at the University on the first Wednesday after the first day of January, the first Wednesday in April, and the last Wednesday in September, in each year.

The examinations cover the branches taught in the first and second years (the prescribed professional course) in the College of Law. The requirements for admission to these examinations are, that the applicant shall pay a fee of $5, and that he shall have studied law for two years either in private or at some law school,

and shall have a good English education. Beginning with the year 1911, he shall have educational attainments equal to those usually offered in the standard high schools of this state, to be ascertained by the law faculty in such a manner as it may determine.

No student in the College of Law shall be admitted to any bar examination for the purpose of obtaining University credit for any course of law; except that, with the approval of the law faculty and the committee on classification and grades, a student who has been previously conditioned in a regular examination of the College of Law may be admitted to a bar examination in the same subject for the purpose of removing the condition.

With the approval of the instructor in charge, persons desiring admission to the bar may take the regular course examinations in the College of Law and receive for the examinations passed credit for the bar examination but no University credit will be given for such examinations.

COURSES OFFERED IN THE COLLEGE OF LAW

NOTE:—Only the technical courses in law are described here. For detailed description of the academic courses in the curriculum see under Courses of Instruction in the College of Arts and Sciences.

Courses marked with a star may be counted for credit in the College of Arts and Sciences.

***1. Persons and Domestic Relations.** Elementary law; nature of laws in general; rules for construction of statutes. Nature of relative rights; essentials of valid marriage; rights and disabilities of husband and wife; antenuptial and postnuptial settlements; separation and divorce; legitimacy of children and legitimation of bastards; rights of parents and children and their respective duties; guardian and ward; infants, persons non compotes mentis and aliens; master and servant and their respective liabilities and rights as to each other and to third persons.

Fall, 8:30; Professor TROTTER, 28 W.

***7. Real Property.** First six weeks, concise course in the principles of real property under the common law as laid down by Blackstone in his Commentaries; last six weeks, the law of real property as found in Tiedman's text-books; includes the nature of real property; study of the different classes of estates with respect to quantity, time of enjoyment, and number of tenants.

Winter, 10:30; Dean HOGG, 27 W.

10. Real Property. Continuation of course 7. Uses and trusts,

executory devises, requisites of a valid deed; method of acquiring title, essentials of a valid will; title by adverse possession; prescription; and methods and forms of abstracting title to real estate.

Spring, 10:30; Dean HOGG, 27 W.

*2. **Contracts.** A comprehensive course covering the whole subject of contracts in theory and practice. It deals minutely with all the essential elements in the formation of the contract, as well as the essentials to a valid discharge of its obligations.

Fall, 9:30; Professor WILLEY, 26 W.

20. **Bailments and Carriers.** The course covers all the various forms of bailments, but deals specifically with common carriers and their liability under all the conditions in which the passenger or shipper may seek to hold them responsible.

Spring, 9:30; Professor WILLEY, 28 W.

6. **Negotiable Paper—Suretyship and Guaranty.** A study of "The Negotiable Instruments Law" as adopted by West Virginia as a basis; together with a discussion of the principles governing negotiable paper and a demonstration of the practical application of these principles. This will be followed by a presentation of the nearly related subjects of suretyship and guaranty.

Winter, 9:30; Professor WILLEY, 26 W.

5. **Insurance.** History, nature and requisites of the contract; parties; insurable interest; the making of the contract; the consideration; consent of the parties; insurance agents and their powers; waiver and estoppel; rights under the policy; standard fire policy; terms of the life policy; marine insurance; accident insurance; guaranty, credit, and liability insurance. One-half credit.

Winter, 8:30; Professor TROTTER, 28 W.

4. **Agency.** The relation of the principal and agent; the performance of the agent's power and the delegation therof; determination of the agency; construction of authority; rights and liabilities between principal and third persons; rights and liabilities between agents and third persons; rights and liabilities between principal and agent. One-half course.

Winter, 8:30; Professor TROTTER, 28 W.

21. **Wills and the Administration of Estates.** The instrument —form and contents; execution—signing and attestation; general requisites and validity; mental capacity; undue influence; revocation, revival and republication; probate and contest; construction and

operation; legacies and devises; executors and administrators, their powers, duties, liabilities and compensation; distribution of the estates of decedents, including the payment of debts, legacies and distributive shares; settlement of estates.

Spring, 10:30; Professor WILLEY, 27 W.

19. Sales. The nature and formalities of the contract of sale; bargain and sale; contract to sell; acceptance and receipt; seller's duties—buyer's rights; buyer's duties—seller's rights.

Spring, 8:30; Professor TROTTER, 28 W.

16. Partnership. Purpose; partners; formation; incidents; rights and duties; powers; liability of firm; liability of partners; actions by and against firm; termination and dissolution; partnership assets; accounting; limited partnerships. One-half credit.

Winter, 9:30; Professor TROTTER, 28 W.

11. Evidence. The subject of evidence is considered from two standpoints; first, the scientific method of searching for truth; secondly, the imitation for the production of evidence in a judicial inquiry. Spring, 11:30; Professor WILLEY, 26 W.

***3. Criminal Law.** Definition, nature and punishment of crime; classification of crimes; the mental element in crime; persons capable of committing crimes, and exemptions from responsibility; parties concerned in the commission of crime; overt acts, attempts, solicitations, and conspiracy; offences against the person; against the habitation; against property; against public health, safety, comfort, and morals; against public justice and authority; against the public peace; against the government and the law of nations; jurisdiction and former jeopardy. Fall, 11:30; Mr. BARNES, 22 W.

8. Criminal Procedure. Apprehension of persons and property; preliminary examination, bail, and commitment; the pleadings; the proof; trial and its incidents; proceedings after verdict; evidence.

Winter, 11:30; Mr. BARNES, 22 W.

9. Torts. Principles of liability; state, judicial, and executive acts; quasi judicial acts; parental and quasi parental authority; the remedies for torts; assault and battery, false imprisonment, injuries to family relations, defamation, fraud, malice, deceit, slander of title, malicious prosecution, etc.; duties regarding property, trespass, injuries to reversion, waste, conversion; injuries between tenants in common, nuisance, negligence, etc.; special relations of contract and tort. Spring, 9:30; Mr. BARNES, 22 W.

14. Equity Jurisprudence. The origin and development of equity jurisprudence; the fundamental principles and maxims which constitute its foundation; the scope and limitation of its jurisdiction; the three principal divisions of equitable remedies, accident and mistake, fraud, and trusts; special jurisdiction, such as equitable liens, assignments, specific performance of contracts, and fiduciary obligations; reformation and cancellation of legal instruments, injunctions, etc. Fall and Winter, 11:30; Professor WILLEY, 26 W.

17. Equity Pleading. This course is to be taken in conjunction with course 14. The nature and object of pleadings in equity, the practical rules which are recognized by courts of equity in the United States, the modifications which have been made by statute in West Virginia, and the effect of the several pleadings in their relation to each other, are discussed. The aim is to cover the most practical part of the subject during the fall term, in order that the student may be ready for the work in court practice, which begins at the opening of the winter term.

Fall and Winter, 11:30; Professor WILLEY, 26 W.

12. Corporations. Definition and nature; creation and citizenship; effect of irregular incorporation; relation between the corporation and its promoters; powers and liabilities of corporations; relation to the state; dissolution; membership; management—officers and agents; rights and remedies of creditors; foreign corporations.

Fall, 9:30; Professor TROTTER, 28 W.

29. Corporations. The organization and management of private corporations; the draft of corporate charters, by-laws, and other corporate papers; method of conducting stockholders' and directors' meetings, and of the proceedings usually occurring at such meetings; general outline of the law of private corporations existing in West Virginia. Lectures and individual work in the law library. One fourth credit. Spring, 8:30; Dean HOGG, 27 W.

***15. Constitutional Law.** Definition and general principles; the relation of the Federal Government to the states; establishment and amendment; construction and interpretation; the co-ordinate branches of government; federal executive; federal jurisdiction; powers of congress; executive, legislative, and judicial power in the states; the police power; power of taxation; the right of eminent domain; civil rights and their protection; political and public rights; constitutional guaranties in criminal cases; laws impairing the obligations of contracts; retroactive laws. One-half course.

Winter, 9:30; Professor TROTTER, 28 W.

13. Common Law Pleading. The course covers the entire subject of common law pleading and the modifications produced by statute and the more liberal principles of modern procedure.

Fall, 10:30; Dean HOGG, 27 W.

23. Courts and Their Officers. Sources of judicial power; the Supreme Court of Appeals and its jurisdiction, original and appellate; the circuit courts and their jurisdiction, original and apellate; the county courts and their jurisdiction; inferior courts, including attorneys at law, their powers, duties and liabilities. Lectures and individual work in the law library. Fall, 9:30; Dean HOGG, 27 W.

24. Actions at Law and Suits in Equity. Parties to actions and suits, in general; parties plaintiff and defendant, in various specific instances in actions ex contractu and ex delicto; joinder of parties, embracing nonjoinder and misjoinder and their consequences; proceedings by and against lunatics and infants; the nature and forms of actions; issuance, service and return of process; the rules; change of venue; removal of causes from a state to a federal court. Lectures and individual work in the law library.

Fall, 2:30; Dean HOGG, 27 W.

26. Legal Documents. The drawing and annotation of affidavits; apprenticeship forms; bonds; assignments; contracts; bills of lading and of sale; deeds of warranty, quit claims, mortgages, deeds of trust, deeds of special commissioners and other persons holding a fiduciary character, and deeds of lease and release; mechanics' liens; notices; options; partnership papers; powers of attorney; promissory notes and other forms of security; protests; proxies; receipts; records and their authentication; wills and codicils thereto; declarations, demurrers and pleas; bills in chancery, and answers thereto; court orders; other forms; examination and abstracting of titles.

Winter, 9:30; Dean HOGG, 27 W.

27. Court Proceedings. Demurrer, its forms, kinds, office, effect, and the judgment thereon; pleas in abatement, their nature, form, filing, and the judgment thereon; pleas in bar, their nature, those of the general issue and special pleas; the issue, how and when made up, and how tried; abatement, revival and survival of actions; continuances; production of books, papers and documents generally upon the trial of an action. Winter, 11:30; Dean HOGG, 27 W.

32. Court Proceedings. This is a continuance of course 27, and includes admissibility of evidence; documentary evidence; expert

evidence; witnesses; the jury; opening and closing the case; order of proof; objections and exceptions; examination, contradiction and impeachment of witnesses; arguments of counsel; instructions; special verdicts; special interrogatories; motion to set aside the verdict, and new trial; judgment and enforcement thereof; bills of exceptions; appellate court practice.

Spring, 11:30; Dean HOGG, 27 W.

30. Federal Procedure. This course will embrace a consideration of the legal and equitable jurisdiction of the federal courts, and procedure therein at law and in equity from the institution of the suit to its termination, as well as many points of practice peculiarly applicable in these courts. Half credit.

Spring, 9:30; Dean HOGG, 27 W.

31. Bankruptcy. This course will embrace a consideration of the bankruptcy act; courts of bankruptcy and their jurisdiction; the filing of the petition, voluntary and involuntary, and the steps necessary to an adjudication in bankruptcy; appointment of referees, their qualifications, oath of office, number, jurisdiction, duties and compensation; appointment of trustees, their qualifications, duties and compensation; creditors' meetings, and the various other steps usually taken in a bankruptcy case; as well as the usual forms in bankruptcy cases, including the petition, schedules, proof of claims, discharge of bankrupt, etc. One-fourth credit.

Spring, 8:30; Dean HOGG, 27 W.

18. Court Practice. This course supplies the drill and discipline necessary to prepare the student for the trial tables. He is taught to apply legal remedies according to the common law and chancery systems of practice; to bring suits, draw papers, pleadings, briefs, etc.; to take the various steps incident to bringing a cause to trial, and to try it according to the rules of evidence, including the argument, charge, verdict, motion in arrest of judgment, writ of error. Appellate procedure is also included. The court is organized in all its details in strict conformity to the practice of the regular courts.

Winter, 2:30; Dean HOGG, 27 W.

22. Court Practice. Continuation of preceding course.

Spring, 2:30; Dean HOGG, 27 W.

28. Court Practice. Continuation of preceding course.

Winter, 2:30; Dean HOGG, 27 W.

33. Court Practice. Continuation of preceding course.

Spring, 2:30; Dean HOGG, 27 W.

THE DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

THE FACULTY

DANIEL BOARDMAN PURINTON, LL.D., *President*

WILLIAM SEWARD WEEKS, B.S., *Second Lieutenant, 4th U. S. Infantry, Commandant of Cadets and Professor of Military Science and Tactics*

THE CADET CORPS

Extracts from the Military Law, State of West Virginia, 1901, sec. 100:—"The Corps of Cadets of the West Virginia University shall be held as the Training School of the West Virginia National Guard, subject to such duty as the Commander-in-chief may order."

Jan. 19, 1903:—"Each member of the Senate shall be entitled to appoint one cadet from his district, on or before the first day of June in the second year of his term, and one cadet on or before the first day of June in the fourth year of his term. Each member of the House of Delegates shall be entitled to appoint one cadet from his county on or before the first day of June next preceding the end of his term. In case a cadetship filled by appointment by any member of the Legislature shall become vacant, the member making the appointment, or his successor, shall fill the same by a new appointment within the limits of the time aforesaid. But no Senator or Delegate shall appoint any cadet until he receives a certificate from the President of the University, or the Commandant of Cadets, giving him notice of his right to do so; and he shall not have the right to exercise such power of appointment as long as two cadets are accredited to himself and his predecessor, either by original appointment or by re-enlistment. All other cadets necessary to make up the full complement of the corps shall be appointed by the regents, in proportion to their number, including vacancies, if any, caused by

the failure of any member of the Legislature to fill his appointment. Cadets shall not be under sixteen years of age, and shall not be over twenty-two years of age. Their appointment shall be made upon undoubted evidence of good moral character and sound physical condition. Their term of enlistment shall be four years, but any cadet, at the expiration of his first term, shall be entitled to re-enlist for further term of two years, upon giving notice of his intention to the commandant of Cadets at least thirty days before the expiration of such term. But not more than fifteen cadets shall be appointed from any Senatorial district, and not more than eight from any one county."

State cadets to the number of 225 are appointed to the University, and receive their uniforms, books, stationery, tuition, use of library, use of arms and equipments, and ammunition for target practice, free. They constitute the public guard of the University and of the public property belonging thereto. Application for an appointment should be made to one of the regents of the University or to a member of the Legislature.

Students of the University who desire military instruction, and who are not state cadets, are allowed to join the corps as volunteer cadets. They receive no uniform from the state.

All cadets are required to wear a neat-appearing gray uniform at drill. This uniform may be worn with propriety on all occasions.

An officer of the regular army is specially detailed by the President of the United States to act as Commandant of Cadets. The inspection of the cadet corps is made by an officer of the General Staff of the Army.

REQUIRED WORK IN MILITARY SCIENCE

The following order has recently been adopted by the State Board of Regents:

Ordered that all male students, with the exceptions hereinafter named, enroll themselves in the Department of Military Science and follow diligently the course of instruction provided therein. Proficiency in this course shall be required for graduation.

Practical and theoretical instruction shall be given four hours per week throughout the school year. A credit of one third of a course shall be given for each quarter's work satisfactorily completed. Such credit shall be included in the computation or the student's standing at the end of each quarter.

The following classes of students shall not be required to enroll themselves in the Military Department but may elect to do so:

(1) All students who are citizens of a foreign country and do not intend to become citizens of the United States.

(2) All students who at date of entrance in the University are more than twenty-three years of age.

(3) All graduate students.

(4) All students whose studies are entirely in the School of Music or Fine Arts.

(5) All students who are taking only the short course, or the special winter course, or agricultural extension work in the College of Agriculture.

(6) All students who are classified as juniors and seniors in the College of Arts and Sciences, the College of Engineering and Mechanic Arts, the Degree Course in the Colleges of Law or Agriculture.

(7) All students who are physically unable to perform military duty.

(8) All students who are compelled to seek employment in order to defray expenses while in the University, providing that such employment cannot be arranged so as to not interfere with the drill hour. It is not the intention to force students to drill when to do so would practically compel them to leave the University. On the other hand, students can not be permitted to engage in other occupations which are not necessary for their support and be excused from drill on the ground that such employment occupies the drill hour. In such a case drill shall be regarded the same as any other study.

No cadet exempted from military drill by reason of self support shall be permitted to enroll himself in any student organization other than the regular literary or scientific organizations of the University.

A board, to be known as the Military and Gymnasium Board, shall be composed of the Commandant of Cadets, the Director of Physical Training, and a Surgeon of the Corps of Cadets, designated by the President. This board shall act upon claims for exemption from military service.

Students who claim exemption under any one of the first six cases must, within seven days after their registration in the University, present to the Commandant, in writing, their request accompanied by such evidence as is relied upon to support the request. A failure to make the request within the stated time shall bar the student from claiming exemption.

Students who claim exemption under the seventh or eighth case must within seven days after their registration in the University present to the Commandant of Cadets, in writing, their request accompanied by such evidence as is relied upon to support the request. Applicants for exemption on the ground of physical disability shall be carefully examined by a surgeon of the Corps. A fee of one

dollar to be paid to the examining surgeon shall be charged for such examination.

Students exempted under the seventh and eighth cases shall, upon recommendation of the Military and Gymnasium Board, be required to register for such physical training as they can take until they have earned a credit equal to that given for the prescribed military work.

In none of the preceding cases shall a student absent himself until his application has been acted upon.

It shall be the duty of the Commandant to notify the Chairman of the Committee on Classification and Grades whenever the Military and Gymnasium Board exempts a student or recommends that he be required to register for other than military drill.

Whenever the cause for exemption shall no longer exist, it shall be the duty of the student to present himself for drill at the next drill period.

Upon recommendation of the Athletic Board of Control, in writing, the Commandant of Cadets may excuse cadets to take part in Athletics. Such cadets shall be excused during the active season only. No cadet shall be excused for practice in more than one class of athletics in any one year.

Students may appeal from the decision of the Commandant of Cadets or the Military and Gymnasium Board, in which case the appeal shall be decided by the University Council.

All cadet officers taking military instruction as an elective shall be, as to their tuition fees, on the same basis as if they were state cadets.

SPECIAL REWARDS FOR MILITARY EXCELLENCE

The names of the three most distinguished cadets of the graduating class are published annually in the Army Register. One of these three may be designated each year to take the examination for commission in the Regular Army.

All graduates of the Military Department are eligible, within five years after graduation, to commissions as first lieutenants in the West Virginia National Guard, without examination.

ARMORY

The Armory (60 by 120 feet) is used as a drill hall during inclement weather. This building is the home of the cadet corps, and all entertainments given by them are held therein, under the supervision of the Commandant of Cadets.

ADMINISTRATION AND INSTRUCTION

For the purpose of administration and drill the cadet corps is organized as an infantry battalion.

The work in the Military Department is taken in connection with other University work, and requires about four hours each week. The course of instruction is intended to fit all who graduate therein to perform efficiently the duties of officers in the National Guard of West Virginia. In addition to technical knowledge, the cadets are taught patriotism, punctuality, obedience, attention, alertness, and neatness, qualities which go toward making a good citizen as well as a good officer. The winter quarter is devoted to theoretical instruction in tactics and other military subjects, together with practical instruction in drill and in gallery practice. A course of lectures in military hygiene is also given.

Infractions of discipline are referred to a court-martial, consisting of cadet officers.

BAND

A band of thirty-two musicians is authorized by the Board of Regents. Band cadets are volunteer cadets. They receive the same allowances as state cadets and are governed by the same rules and regulations. They receive free of charge, tuition, uniform, books, stationery, and instruction in band music. They are exempt from gymnasium work. They are required to be instructed in military drill including the school of the soldier and of the squad.

INFORMATION FOR APPLICANTS FOR APPOINTMENT TO THE CADET CORPS

1. The applicant must not be under sixteen nor over twenty-two years of age.

2. He must be a bona fide resident of West Virginia.

3. He must be sound physically, of good moral character, and able to pursue successfully the studies of the last year of the Preparatory School.

4. He must make a deposit of $20.00 with the treasurer of the University as a guaranty that the state arms, etc., in his possession will be taken care of. The deposit will be returned to him at the end of his enlistment of two years, upon satisfactory settlement with the quartermaster.

5. He must make an average grade each term of not less than sixty on a scale of one hundred, in order to hold his appointment.

6. Cadets are furnished with uniforms, text-books, and stationery free of charge. They pay no matriculation, tuition, or contingent fees to the University. If they are graduated from any department of the University while members of the cadet corps, they are allowed to retain their text-books.

7. The work of the corps does not interfere with the student's scholastic duties. Cadets may take courses in any of the departments of the University.

8. A young man desiring an appointment should apply to the regent for his county, or to a member of the Legislature representing his county. The counties of the state are divided as follows by the Board of Regents for the purpose of cadet appointments:

REGENT J. B. FINLEY, Parkersburg, W. Va.
Brooke, Doddridge, Hancock, Marshall, Ohio, Pleasants, Ritchie, Tyler, Wetzel, Wirt, and Wood.

REGENT G. S. LAIDLEY, Charleston, W. Va.
Boone, Clay, Fayette, Greenbrier, Kanawha, Mercer, Monroe, Nicholas, Raleigh, Summers, and Wyoming.

REGENT M. C. LOUGH, Fairmont, W. Va.
Barbour, Braxton, Gilmer, Harrison, Lewis, Marion, Monongalia, Preston, Taylor, Upshur, and Webster.

REGENT G. A. NORTHCOTT, Huntington, W. Va.
Cabell, Calhoun, Jackson, Lincoln, Logan, Mason, Mingo, McDowell, Putnam, Roane, and Wayne.

REGENT M. P. SHAWKEY, Charleston, W. Va.
Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral, Morgan, Pendleton, Pocahontas, Randolph, and Tucker.

9. Students who have cadet appointments should upon their arrival at the University present themselves at the office of the Com mandant, in the armory, and obtain the necessary information about registering, etc.

COURSES OF INSTRUCTION

The following courses in Military Science and Tactics are offered, each course requiring one hour recitation and three hours' practical work per week, for which a credit of one-third course is given:

1. Military Science. (a) Practical: infantry drills, guard duty, and physical training. (b) Theoretic: recitations in "Infantry Drill Regulations, U. S. Army," paragraphs 1 to 118, inclusive.

2. Military Science. (a) Practical: same as course 1 with ad-

dition of gallery practice. (b) Theoretical: recitations in "Infantry Drill Regulations, U. S. Army," paragraphs 119 to 241, inclusive.

3. Military Science. (b) Practical: same as course 1. (b) Theoretical: recitations in "Manual of Guard Duty, U. S. Army," paragraphs 1 to 280, inclusive; recitations in "Manual of Bayonet Exercises, U. S. Army."

4. Military Science. (a) Practical: same as course 1. (b) Theoretical: recitations in "Infantry Drill Regulations, U. S. Army," paragraphs 242 to 347, inclusive; recitations in "Manual of Guard Duty, U. S. Army," paragraphs 281 to 440, inclusive.

5. Military Science. (a) Practical: same as course 2. (b) Theoretical: recitations in "Infantry Drill Regulations, U. S. Army," paragraphs 437 to 464; 474 to 475; 486 to 493; 497 to 522; 534 to 552; 587 to 602, all inclusive.

6. Military Science. (a) Practical: same as course 1, with addition of tent pitching, gallery and target practice. (b) Theoretical: lectures on Small Arms Firing.

7. Military Science. (a) Practical: same as course 1. (b) Theoretical: recitations in "Infantry Drill Regulations, U. S. Army," paragraphs 348 to 436; 465 to 473; 476 to 485; 494 to 496; 423 to 533; 553 to 586, all inclusive.

8. Military Science. (a) Practical: same as course 6. (b) Theoretical: lectures and recitations on "Firing Manual, U. S. Army."

9. Military Science. (a) Practical: same as course 5. (b) Theoretical: lectures and recitations on Field Service Regulations."

10. Military Science. (a) Practical: same as course 1. (b) Theoretical: lectures and recitations on army organization, map reading, patrols, outposts, advance and rear guards, etc.

11. Military Science. (a) Practical: same as course 2. (b) Theoretical: lectures and recitations on "Field Service Regulations, U. S. Army."

12. Military Science. (a) Practical: same as course 1. (b) Theoretical: lectures and recitations on Military Law, Military Code of W. Va., Courts Martial and Military Hygiene.

13. Military Science. (a) Practical: same as course 1. (b) Theoretical: lectures and recitations on Paper Work of U. S. Army and of Organized Militia.

14, 15, 16, 17, 18. Military Science. (a) Practical: same as course 1. (b) Theoretical: duty as instructor in some one or more courses.

MILITARY GRADUATES AND DISTINGUISHED CADETS

Reported at Commencement, June, 1910

The following are announced as distinguished cadets:

First Section

Cadet First Lieutenant Walter W. Point, Jr., Co. B.
Cadet Chief Trumpeter Enoch Smith, N. C. S.
Cadet Second Lieutenant Homer A. Hoskins, Co. A.

Second Section

Cadet Second Lieutenant John L. Robinson, Co. B.
Cadet First Lieutenant Harry G. Wheat, Staff.
Cadet First Lieutenant Charles G. Baker, Staff.

Third Section

Cadet First Sergeant Frank V. Sander, Co. B.
Cadet Sergeant Eugene E. Evans, Co. A.
Cadet Sergeant Leonard J. Bernstein, Co. B.

Fourth Section

Cadet Private Irl N. Duling, Co. B.
Cadet Private Charles S. Robinson, Co. B.
Cadet Private Eustace T. Goff, Co. B.

The following named cadets having completed the prescribed course of instruction, are announced as graduates of the Department of Military Science and Tactics:

Order	NAME	Attendance 200	Discipline 200	Infantry Drill Regulations 400	Manual of Guard Duty 200	Small Arms Firing Regulations 100	Field Service Regulations 200	Small Arms Practice 100	U. S. Army Regulations 100	Total 1500	Grade	Course Credit
1	Point, Walter W..	189.2	190.0	378.6	190.0	92.0	173.4	80.0	85.2	1371.3	91.4	1
2	Smith, Enoch.....	200.0	200.0	310.4	144.0	96.0	169.0	70.0	82.6	1285.0	85.6	1
3	Hoskins, H. A....	189.0	176.0	394.0	180.0	98.0	169.7	50.0	86.2	1283.6	85.5	1

Upon decision of the Judges, the Cadet Colors for the ensuing year were awarded to Company B.

Upon decision of the Judges, the sabre and belt offered by the M. C. Lilly & Co., to the captain of the best drilled company, are awarded to Cadet Captain Claude S. Tetrick, Company B.

The medals offered by the Board of Regents are awarded as follows:

(1) The gold medal for drill and discipline, to Cadet Sergeant Stephen P. Hoskins.

(2) Silver medal for highest aggregate score at target practice, to Cadet First Lieutenant Charles G. Baker, Staff.

(3) Silver medal for second highest aggregate score at target practice, to Cadet Second Lieutenant John L. Robinson, Company B.

ROSTER OF CORPS OF CADETS

William S. Weeks,	2d Lieutenant 4th Infantry, Commandant
Henry St. Clair,	Ordnance Sergeant, U. S. A., Armorer

FIELD AND STAFF

George W. Grow,	Cadet Major
John N. Simpson,	Captain, Surgeon
Harry G. Wheat,	Cadet Captain, Adjutant
Claude S. Tetrick,	Cadet Captain, Officer of the Day
Leonard J. Bernstein,	Cadet 1st Lieutenant, Quartermaster
Frank V. Sander,	Cadet 1st Lieutenant, Officer of the Guard

NON-COMMISSIONED STAFF

Karl H. Gorman,	Cadet Sergeant Major
Jay B. Levy,	Cadet Quartermaster Sergeant
John Y. York,	Cadet Color Sergeant
Truman M. Martin,	Cadet Color Sergeant
George R. Jackson,	Cadet Chief Trumpeter

BAND

Walter A. Mestrezat,	Chief Musician
Thomas C. Pitzer,	Cadet Principal Musician
Claude C. Hamilton,	Cadet Drum Major

Cadet Sergeants

Julius H. Hefke	Arthur L. Frye
Eugene C. Hammel	Leonard L. Finch

Cadet Corporals

Alphonza L. Ellis	L. B. Griffin
John H. Beaumont	H. S. Meldahl
Constantine G. Psaki	E. F. Heiskell
N. C. Burdett	R. R. Feller

COMPANY "A"

John L. Robinson,	Cadet Captain
Milton DeWitt Fisher,	Cadet 1st Lieutenant
Stephen P. Hoskins,	Cadet 2d Lieutenant
Jonathan C. Powell,	1st Sergeant
Charles S. Robinson,	Sergeant
Forrest P. Coombs,	Sergeant

Cadet Corporals

J. F. Robinson	Landon J. Sigler
Jesse J. Jenkins	Robert L. Bates

COMPANY "B"

Neal M. Heflin,	Cadet Captain
Allan B. Lambdin,	Cadet 1st Lieutenant
Lewis G. Burrell,	Cadet 2d Lieutenant
Irl N. Duling,	Cadet 1st Sergeant
A. R. Groves,	Sergeant
J. S. Miller,	Sergeant

Cadet Corporals

Marshall D. Brooke
Philip M. Conley
Clifford R. Snider
Russell H. Gist

COMPANY "C"

Charles G. Baker,	Cadet Captain
Eugene E. Evans,	Cadet 1st Lieutenant
J. C. Allen,	Cadet 2d Lieutenant
Orton E. Duling,	Cadet 1st Sergeant
Hugh G. Fortney,	Cadet Sergeant
John L. Stewart,	Cadet Sergeant

Cadet Corporals

Joseph A. Conner
L. S. Lewellen
C. R. Foltz
C. M. Shafer

DEGREES, DIPLOMAS AND PRIZES.

FORTY-SECOND ANNUAL COMMENCEMENT, JUNE 15, 1910

CANDIDATES FOR DEGREES

Master of Arts

ETHEL AVERIL GREEN, A.B., West Virginia University, 1908	Morgantown
JOHN ARNDT YOUNT, A.B, Roanoke College, 1901	Morgantown

Master of Laws

ROY OLNEY HALL, LL.B., West Virginia University, 1909.	Grafton

Bachelor of Arts

MARY MEEK ATKESON,	Buffalo
LUTHER SHERMAN BRITTON,	Revel
LAVEGA WASHINGTON BURNS,	Marlinton
LEWIS SMITH CORE,	Mt. Morris, Pa.
JAMES ROY ECKMAN,	Leechburg, Pa.
JOHN CHRISTLER EVANS,	New Cumberland
JOHN KENNEDY FINLAYSON (as of 1909),	Sistersville
MARY STEWART FRAVEL,	Poca
NELLIE GRANT HENDERSON,	West Alexander, Pa.
OLIVE IRELAND HODGES,	Morgantown
ETHEL ICE,	Farmington
ARTHUR MELVILLE JACOBS,	Fairmont
FREDERICK ROST KOELZ,	Keyser
KARL SPENCER LASHLEY,	Davis
CHARLES WILLIAM LOUCHERY,	Clarksburg
CLARA BELLE LYTLE,	Parkersburg
MARGARET ELEANOR MOCKLER,	Mannington

ETHEL CRIM PETERSON, Weston
VERD PETERSON, Weston
WALTER WARREN POINT, JR., Huntington
MAHALA DORCAS PRICHARD, Fairmont
ELIZA JANE PUGH, Washington, Pa.
GEORGE EDWARD RHODES, Charleston
NELLIE VICTORIA STEELE, Morgantown
RENA FRANCES TUTTLE, Essex Junction, Vt.
HELEN BLANCHE VANCE, Erie, Pa.
JOSEPH COCHRAN VANCE, Morgantown

Bachelor of Science

ROBERT LESTER BUCHANAN, West Alexander, Pa.
ARCHIBALD HUPP BULLARD, Wheeling
NYNA LUCY FORMAN, Grafton
DONALD ROSS, Scottdale, Pa.
RODNEY MILTON STEMPLE, Aurora
ANDREW ALPHONSO TORRANCE, Huntington

Bachelor of Laws

LEO CARLIN, Smithfield
A.B., West Virginia University, 1909
WILBER EARL CATHER, Grafton
MARION CHAMPE GILCHRIST, Charleston
A.B., Ohio Wesleyan University, 1908
JUSTIN HENDERSON, Buckhannon
EDWARD FREDERICK HORSTMANN, Wheeling
WILLIAM MICHAEL KENNEDY, Fairmont
A.B., West Virginia University, 1908
WILLIAM GRIFFITH LAVELLE, Tunnelton
A.B., Rock Hill College, 1902
AUSTIN COOK MERRILL, Carthage, N. Y.
A.B., Yale University, 1908
JOHN LOWSTETTER MOLLISON, Scottdale, Pa.
TREVEY NUTTER, Fairmont
BOYD MILTON SMITH, Elkins
HERBERT EARL STANSBURY, Marshes

Bachelor of Science in Civil Engineering

JAY EDGAR BILLINGSLEY, Cross Roads
HARRY ANTHONY EATON, U. S. Army
A.B., West Virginia University, 1897; L.L.B., ibid, 1898.
ROBERT MURRAY GAWTHROP, Bridgeport
GROVER CLEVELAND LEMLEY, Mt. Morris, Pa.

EDGAR PEARL MCCOMBS,	Sherrard
CHARLES MOON,	Morgantown
HARRY RUFFNER WILEY,	Malden

Bachelor of Science in Mechanical Engineering

GEORGE GRANT CREWSON,	New Cumberland
CHARLES VICTOR FELLER,	Martinsburg
OSCAR FRANKLIN GIBBS, (as of 1909)	Point Pleasant
NOBLE ABNER WOLFE,	Wheeling
THOMAS SHAFFER PATTERSON,	Elizabeth, Pa.

Doctor of Medicine

JESSE RAY TUCKWILLER,	Morgantown

Doctor of Veterinary Science

ERNEST BELL,	Wana
ARTHUR BURTON WILLIS,	Shinnston

Diploma of Graduation in Law

FREDERICK HENRY BRINKMAN,	Wheeling
HOWARD CURTIS BARRON,	Shamokin, Pa.
MICHELANGELO GARIBALDI BUFANO,	Connellsville, Pa.
BANTZ WOODDELL CRADDOCK,	Glenville
HUBERT GARRETT CROGAN,	Newburg
DAVID ARTHUR CRONIN,	Portland, Conn.
LEE FRANK EVERHART,	Buckhannon
JOHN HENRY HABERMEHL,	Woodland
JOHN PALMER HUNDLEY,	Masontown
ROBERT SIMMS JUDGE,	Wellsburg
JASPER NEWTON KEE, JR.,	Glenville
BURRELL KEMP LITTLEPAGE,	Charleston
FRANK WITCHER MCCULLOUGH,	Huntington
ELLIOTT CLYDE WALDO SCOTT,	Beckley
HENRY GASSAWAY SHORES,	Keyser
KARL HARPER WEADON,	Mt. Carbon

Diploma in Agriculture

EDWIN LEWIS SWEARINGEN,	New Cumberland
ARTHUR RAYMOND TABLER,	Martinsburg

Certificate in Agriculture

VERNER VADIS LAW, Lawford

PRIZES AND HONORS

The Inter-Society Prizes

For the Columbian Society:

Debate

ROBERT MOSS FRENCH, Special Law.....Berkeley
WAYNE KENNEDY PRITT, Special Law.....Parsons

Declamation

OLIVER SHURTLEFF, Sophomore.....Fairmont

For the Parthenon Society:

Essay

CLARA BELLE LYTLE, Senior.....Parkersburg

Oration

WILLIAM GRIFFITH LAVELLE, Second Year Law.....Tunnelton

The Regents' Prize in Composition

CHARLES MELVIN LOUGH, Junior.....Cameron

The James F. Thompson Prize

RAY MAXWELL BOBBITT, Freshman.....Hinton

The Edward Thompson Company Prize

TREVEY NUTTER, Third Year Law.....Fairmont

The Tax Commission Prize

BENNETT RANDOLPH BIAS, Special Law.....Williamson

The Russell Love Morris Prize

ROBERT MURRAY GAWTHROP, Senior.....Bridgeport
CHARLES MOON, Senior.....Morgantown

COMMENCEMENT AND CONVOCATION SPEAKERS

Commencement, June, 1910 — Baccalaureate Sermon: Shailer Mathews, A.M., D.D., Dean of the Divinity School, University of Chicago.

Commencement, June, 1910 — Addresses: Newell Dwight Hillis, A.M., D.D., Pastor of Plymouth Church, Brooklyn, New York; William E. Glasscock, Governor of West Virginia.

Summer School Convocation—Bishop William F. Anderson, LL.D., New York City.

Fall Quarter Convocation—Powell Benton Reynolds, A.M., D.D., Morgantown, West Virginia.

Winter Quarter Convocation—William North Rice, Ph.D., LL.D., Wesleyan University, Middletown, Connecticut.

Spring Quarter Convocation—Samuel Fallows, D.D., LL.D., Chicago, Illinois.

ALUMNI ASSOCIATIONS

GENERAL ASSOCIATION

President	HERMAN G. STOETZER, '89	Charleston, W. Va.
Vice-President	WALTER H. SOUTH, '00	Morgantown, W. Va.
Secretary	D. M. WILLIS, '99	Morgantown, W. Va.
Treasurer	G. B. MILLER	Morgantown, W. Va.

Executive Committee

FRANK COX,	Morgantown
D. M. WILLIS,	Morgantown
C. R. JONES,	Morgantown
MISS NELL MORELAND,	Morgantown
MISS MARGARET BUCHANAN,	Morgantown
C. B. DILLE,	Morgantown
WALTER SOUTH,	Morgantown
MRS. WILLA HART LEHMAN,	Fairmont
WM. G. BROWN,	Kingwood
GEO. S. LAIDLEY,	Charleston
THOMAS E. HODGES,	Morgantown
C. M. BABB,	Morgantown
R. L. MORRIS,	Morgantown
RICHARD DAWSON,	Uniontown, Pa.
ED. G. DONLEY,	Morgantown
ROBERT GREEN,	Morgantown
M. C. LOUGH,	Fairmont
H. C. OGDEN,	Wheeling
D. H. COURTNEY,	Morgantown
M. M. NEELY,	Fairmont

EASTERN PANHANDLE ALUMNI ASSOCIATION

President	H. H. EMMERT, '88	Martinsburg, W. Va.
Secretary	C. E. MARTIN, '99	Martinsburg, W. Va.

WEST VIRGINIA UNIVERSITY CLUB OF WESTERN PENNSYLVANIA

President	G. H. F. HOLY	Pittsburg, Penna.
Vice-President	F. G. ROSS	Pittsburg, Penna.
Secretary-Treasurer	F. J. STONE	Pittsburg, Penna.

Executive Committee

F. G. ROSS G. H. F. HOLY F. J. STONE

J. N. CALVERT A. T. DAVENPORT

Annual reunion, third Friday in January.

LIST OF STUDENTS.

REGULAR COLLEGE STUDENTS

NOTE:—The following list includes the names of all students enrolled in the various colleges of the University, arranged in alphabetical order. Following each student's name and address are given his class, the course of study which he is pursuing, or the degree for which he is a candidate. The word freshman, sophomore, etc., following the student's name indicates his rank on the first day of January, 1911. Students whose names are marked with an asterisk (*) are ranked as freshmen, but are conditioned in one or more preparatory subjects. Students marked as special students are classified in accordance with the regulations found on page 35 of the catalogue. Students classified as B.S.M.D. had matriculated as candidates for this degree prior to July 1, 1911. Students classified as Diploma Law students had matriculated prior to the abolition of the Diploma Course in Law.

Abbott, Fred Luther	Grafton	Fr., B.S.M.E.
Adams, Isaac Maxwell, Jr.	Ravenswood	1st Year Law
*Adams, John Ross	Morgantown	Fr., B.S.M.E.
Allen, James Cornwell	St. Marys	Soph., B.S.M.E.
Allman, Evert Farl	Jane Lew	1st Year Vet. Sci.
Amos, Clay Dille	Fairmont	Sen., A.B.
Amos, Curt Edgar	Fairmont	Soph., A.B.
Amos, Frank Rezin	Fairmont	1st Year Law
Andris, Irene Marie	Morgantown	Jun., A.B.
*Arnold, Edna	Weston	Fr., A.B.
*Ash, Irvin Oda	Middlebourne	Fr,, A.B.
Ashworth, Benjamin Harrison	Iaeger	Fr,, A.B.
Atkeson, Leda Cordelia	Morgantown	Jun., A.B.
Atorthy, Noresh Chandra	Calcutta, India	Fr., B.S.
Bachman, Carl George	Wheeling	Soph., A.B.
Bailey, Sebie	Buckhannon	Fr., A.B.

*Baker, Ray Elbert	Huntington	Fr., B.S.C.E.
Baker, Charles George	Morgantown	Sen., A.B.
Ball, William Thomas	Hinton	Bar Law
Barncord, Norman Roland	Morgantown	Bar Law
Barnes, Uriah	Morgantown	Special, A. & S.
Barnett, Joseph, Jr.	Clarksburg	Fr., A.B.
*Barto, Robert Edwin	Pine Grove, Pa.	Fr., B.S.
Bates, Robert Lee	Kearneysville	1st Year Law
Boughner, Edward James	Folsom	Soph., B.S.M.E.
Beardsley, Edward Henry	Morgantown	Jr., B.S.C.E.
Bell, Alexander Deacon	Morgantown	Sen., B.S.M.E.
Bell, Ernest Roy	Fairmont	Soph., A.B.
Bell, Bessie Boyd	Glenville	Fr., A.B.
Bernstein, Leonard Julius	Sutton	Jr., B.S.M.D.
Bess, Thomas Floyd Ernest	Hinton	Soph., B.S.M.D.
Bierer, Joseph	Morgantown	Fr., B.S.C.E.
Biern, Samuel	Huntington	3rd Year Law
*Bird, Grace	Martinsburg	Fr., A.B.
Bolin, Hafid Alexander	West Union	1st Year Law
Bobbitt, Ray Maxwell	Huntington	Soph., B.S.M.D.
Bock, Edward Sidney	Clarksburg	Sen., A.B. & LL.B.
Blair, Jackson Van Buren	Hinton	Bar Law
Bonar, Martin Loxley	Moundsville	Soph., B.S.
Bond, Marcus Orran	Wheeling	Sen., B.S.
Bonner, Harrie Russell	Parkersburg	Jr., A.B.
Borror, Bruce	Davis	Soph., B.S.
Boseley, Bruce Hamilton	Keyser	Special, A. & S.
Boughner, John Glenn	Sistersville	Fr., B.S.C.E.
Boughner, Jennie	Morgantown	Jr., A.B.
Brennan, James Thomas	Clarksburg	Jr., B.S.M.D.
Brinsmade, Helen Christine	Morgantown	Grad., A. & S.
A.B., University of Wisconsin, 1908		
Bromley, Edgar Duvall	Ridgeway	Jr., B.S.C.E.
Brooks, Alonzo Beecher	Morgantown	Special, Agr.
Brooks, Morgan McClancey	Grafton	Soph., A.B.
Brown, Edgar Carlton	Mangum, Okla.	Fr., B.S.
Brown, Howard Condit	Porter	Fr., B.S.M.E.
Brown, Charles	Morgantown	Soph., Vet. Sci.
Brown, Iris	Morgantown	Fr., A.B.
Bunner, Ezra Elsworth	Morgantown	Bar Law
Burdette, William Alexander	Ona	Fr., B.S.C.E.
*Burdett, Nathan Clarkson	Charleston	Fr., A.B.
Burns, Corwin Sage	Morgantown	Soph., B.S.M.E.
Burnside, Guy Herman	Morgantown	2nd Year Law
Burrell, Howard Kenwell	Weston	Sen., B.S.C.E.

Burrell, Lewis Glenn	Weston	Fr., B.S.C.E.
Burritt, Clark Culbertson	Morgantown	Sen., B.S.C.E.
Cady, Elizabeth	Morgantown	Fr., A.B.
*Caldwell, James Lewis, Jr.	Huntington	1st Year Law
Campbell, Harry Lucas	Little Hocking, O.	Sen., B.S.C.E.
Carfer, Archie Boyd	Parkersburg	Fr., B.S.Agr.
*Carney, Herbert Luther	Charleston	1st Year Law
Casto, Charles Clayton	Spencer	Fr., B.S.
Cathcart, Aura Beatrice	Moscow Mills, Md.	Fr., B.S.
Caulfield, Leo Patrick	Clarksburg	1st Year Law
Charter, Lena Mabel	Ravenswood	Jr., B.S.
Chez, Anthony Wencel	Morgantown	1st Year Law
*Clark, Raymond Earl	Morgantown	Fr., A.B.
Clifford, Lucy Clare	Clarksburg	Sen., A.B.
Cobb, Minnie	Apple Grove	Fr., A.B.
Cole, Jeremiah Wilson	Cameron	Soph., A.B.
Colebank, George Henry	Morgantown	Jr., A.B.
Colebank, Grace Cassell	Morgantown	Special, A. & S.
Compton, Elma Pearl	Keyser	Jun., A.B.
*Compton, Ada Blanche	Keyser	Fr., A.B.
Conaway, Ernest Daniel	Enterprise	Jun., A.B.
Conley, Philip Mallory	Charleston	Fr., A.B.
Cooke, Elizabeth Josephine	Morgantown	Fr., A.B.
Core, John Lee	Pentress	Sp., Vet. Sc.
Correy, John William	Mason	Special, A. & S.
Cottrill, Delford Lee	Orton	Soph., B.S.Agr.
Cox, Nell Hazel	Fairmont	Jr., A.B.
Cox, Anna Grace	Millwood, Va.	Sen., A.B.
Cox, Stanley Rhey	Morgantown	Sen., A.B.
Cox, Wayne	Morgantown	Fr., A.B.
Crawford, Thomas Wilmer	New Cumberland	Soph., B.S.C.E.
*Crawford, Stephen Rowan	Pine Rd. Fox Chase, Philadelphia, Pa.	1st Year Law
Crow, Charles Sumner	Point Marion, Pa.	Grad., A. & S.
A.B., West Virginia University, 1906.		
Crowl, Walter Beryl	Fairmont	Jun., B.S.M.E.
Cummins, George Harold	Wheeling	Sen., B.S.M.E.
*Curtis, Allan Walker	Elm Grove	Fr., A.B.
Dadisman, Samuel Houston	Grafton	Soph., A.B.
Dadisman, Andrew Jackson	Grafton	Fr., A.B.
Dailey, Arthur Jerome	Buckhannon	2nd Year Law
Darby, Roy Clyde	Oil City, Pa.	Sen., Dip. Law
*Darling, Anna Belle	Morgantown	Fr., A.B.

Davis, Gail	Morgantown	Soph., A.B.
Davis, Anna Beulah Christine	Morgantown	Soph., A.B.
Davis, Florence Priscilla	Wellsburg	Jun., A.B.
Dean, David McConaughey	Fairmont	Fr., B.S.C.E.
DeBerry, Helen Margaret	Terra Alta	Sen., A.B.
*Deem, Fred Blaine	Parkersburg	Fr., B.S.M.E.
Dickason, Clara Elizabeth	Columbus, Ohio	Sen., A.B.
Dille, James Evans	Morgantown	Jr., B.S.Agr.
Dodd, David Rollin	Hedgesville	Fr., B.S.
Donnally, Moses Starke	Charleston	Jun., B.S.M.E.
Dorsey, Henry	Pearl	Fr., B.S.Agr.
Douthitt, Carl Czerny	Grafton	Bar Law
Dunkle, John Lee	Deer Run	Jr., B.S.
*Eagan, Fannie	Ronceverte	Fr., A.B.
Edwards, Levi Arthur	Mason	1st Year Law
Elson, Otto Dale	Wellsburg	Sen., B.S.C.E.
Ely, John Calvin, Jr.	Finleyville, Pa.	Sen., A.B.
Emery, Blanche Frances	Sistersville	Soph., A.B.
*Evans, Joseph Earl	Short Creek	Fr., B.S.
Evans, Eugene Everly	Morgantown	Jr., B.S.
Everhart, Lee Frank	Buckhannon	Soph., A.B.
Evick, Walter Clifton	Beverly	Bar Law
Feller, Richard Roeder	Martinsburg	Fr., B.S.C.E
Fernandez, Eugenio	Rio Grande, P. R.	Fr., B.S.M.D.
*Finch, Leonard Lloyd	Shinglehouse, Pa.	Fr., A.B.
Fine, Reuben	Martinsburg	Fr., A.B.
Fisher, Milton DeWitt	Morgantown	Jun., B.S.C.E.
Fitzgerald, Lee Roy	Cameron	Fr., B.S.M.E.
Fleshman, Howard Franklin	Morgantown	Sen., A.B.
Fletcher, William Cody	Athens	2nd Year Law
Fling, Eva Myrtelle	Alfred	Sen., A.B.
Flournoy, Samuel Lightfoot	Charleston	Bar Law
Floyd, Charles Duffy	Glenville	1st Year Law
Flynn, George McDowell	Charleston	1st Year Law
Foltz, Charles Roy	Martinsburg	1st Year Law
Forman, Nyna Lucy	Morgantown	Grad., A. & S.
B.S., West Virginia University, 1910.		
Foulk, Eric Anderson	Huntington	Fr., B.S.M.E.
Francis, Albert Galliton	Scottdale, Pa.	Special, A. & S.
*Frazier, Paul Jenkins	Fort Gay	Fr., B.S.M.D.
Friedman, Sidney Loth	Point Pleasant	3rd Year Law
Frye, Arthur Leslie	Cameron	Fr., B.S.

Gardiner, Mabel Henshaw	Martinsburg	Sr., A.B.
Gardiner, Anna Henshaw	Martinsburg	Soph., A.B.
Garrison, John Dunham	Morgantown	Sen., A.B.
Gaskins, Walter Wesley	Fairmont	Jun., B.S.C.E.
Gatewood, Massie Cameron	Linwood	Bar Law
Gibson, Joseph Vincent	Tunnelton	2nd Year Law
Gilmore, Esther	Saint Cloud	Jr., A.B.
Gilson, Van Wagenen	Mannington	Jr., A.B.
Gist, Russell Henderson	Wellsburg	Fr., B.S.
Goff, Eustace Thomas	Hazel Green	Soph., B.S.M.D.
Goff, William Rush	Spencer	Jun., A.B.
Goodrich, Wilson Jay	Sistersville	Fr., A.B.
*Goodwin, Spencer King	McMechen	Fr., B.S.C.E.
Gould, Richard Jesse	Parkersburg	Sen., B.S.E.M.
*Grandstaff, Annie Elizabeth	Elm Grove	Fr., A.B.
Green, Ethel Averil	Morgantown	Grad., A. & S.
A.B., West Virginia University, 1908.		
*Greene, Harry Horten	Bridgeport	Fr., A.B.
Griffin, Harry Lewis	Belington	Sen., A.B.
*Griffin, Lawrence Barrett	Mannington	Fr., B.S.Com.
Grimm, Homer Willard	St. Marys	Soph., B.S.M.D.
Grose, Sylvester Carson	Sago	Soph., A.B.
Grover, Homer David	Earl	Jr., B.S.Agr.
Grow, George Walter	Williamstown	Sen., B.S.M.E.
Grubb, Joseph Krause	Parsons	Fr., B.S.C.E.
Gunnoe, George Hutchinson	Crany	2nd Year Law
*Guseman, Sadie Ray	Morgantown	Fr., A.B.
Hall, Jerome Venoir	Buckhannon	2nd Year Law
Hall, Roy Olney	Morgantown	Jun., A.B.
Hamilton, Claude Dewis	Morgantown	Soph., B.S.M.D.
Handley, Robert Arbuckle	Lewisburg	Sr., B.S.C.E.
Hardman, Carl	Parkersburg	Bar Law
Haworth, James Rodgers	Huntington	Soph., A.B.
Haught, Benjamin Franklin	Keyser	Sen., A.B.
*Hayhurst, Zelma Isabel	Parkersburg	Fr., A.B.
Hearn, Willie Oswell	Bluefield	Fr., B.S.
*Hedges, Grover Foster	Spencer	1st Year Law
Hefke, Julius Henry	Dayton, Ohio	Sen., B.S.
Heflin, Neal Minter	Grafton	Soph., B.S.M.E.
Hensley, William Henry	Ceredo	Bar Law
Herring, Nellie May	Kingwood	Soph., A.B.
*Herring, Eleanor Emma	Kingwood	Fr., A.B.
Hibbs, Ethel	Fairmont	Fr., A.B.
Hickman, James Howard	Auburn	Fr., A.B.

Hinds, Holman Blaine, Jr.	Rockwood, Tenn.	Bar Law
Hodges, Arthur Brown	Morgantown	Sen., A.B.
Hodges, Charles Edward	Morgantown	Soph., A.B.
Hodges, Mabel Clare	Morgantown	Jun., B.S.
Hogg, Harriet Primrose	Wellsburg	Special, A. & S.
Hogg, Charles James	Morgantown	Special, A. & S.
*Hogg, Robert Lynn	Morgantown	Fr., B.S.Com.
Holroyd, Mary Manning	Athens	Jun., A.B.
Holt, John Howard, Jr.	Moundsville	Fr., LL.B.
Hoover, Olive Foster	Wolf Creek	Soph., A.B.
Hoover, Lawrence Grant	Morgantown	Soph., A.B.
Hopkins, Wirt Simpson	Exchange	Fr., A.B.
Hopwood, Margaret Bradfield	Morgantown	Soph., A.B.
Hoskins, Stephen Paul	Weston	Fr., B.S.M.E.
Houston, June Carey	Morgantown	Jun., B.S.
Howard, Opal Flodell	Cameron	Special, A. & S.
Hubbs, George Emanuel	Moundsville	Soph., A.B.
Hudson, Arthur Patrick	Charleston	Bar Law
Humes, Harry Oliver	Mannington	Soph., B.S.M.E.
Humphreys, Harry Christopher	Organ Cave	Jun., A.B.
Hunt, William French	Morgantown	Jr., A.B.
Hunter, Glenn	Morgantown	2nd Year Law
Hupp, Edwin Erle	Parkersburg	Fr., B.S.Agr.
Hurlburt, Russell Blair	Iowa City, Iowa	Grad., A. & S.
B.S.M.E., Cornell University.		
Hutchison, Bernard Lee	Fairmont	Sen., B.S.
Hutson, Stella Delle	Clarksburg	Fr., A.B.
Israel, Mary Marguerite	Clarksburg	Fr., A.B.
Ice, Lory Francis	Smithfield	2nd Year Law
*Jackson, George Reynolds	Clarksburg	Fr., A.B.
Jemison, Lawrence Lee	Middlebourne	Fr., B.S.C.E.
Jenkins, Jesse J.	Uffington	Fr., B.S.M.D.
Johnson, Richard William	Union	Soph., A.B.
Johnson, Salome Elizabeth	Alderson	Special, A. & S.
*Johnson, Warren Wellington	Belington	Fr., A.B.
Jones, John Paul	Sistersville	Fr., B.S.
Kahn, David Harman	Parkersburg	Sen., B.S.E.M.
Kaltenbach, Earl George	Wheeling	Fr., B.S.C.E.
Keenan, Marl	Morgantown	Fr., B.S.C.E.
Keller, Arch Loven	Middlebourne	Fr., B.S.
Kelley, Orlando Alfred	Morgantown	Special, A. & S.
Kelley, Samuel Allen	Morgantown	Fr., B.S.Com.

Kennedy, James Edward	Boothsville	Soph., A.B.
Kennedy, John James	Fairmont	Jr., B.S.
Kern, Albert John	Fairmont	2nd Year Law
Kerns, George	Charleston	Fr., A.B.
Kiger, Pearl Randolph	Sherrard	Fr., B.S.M.E.
Kilgore, Harlie Martin	Morgantown	Fr., A.B.
King, Harry William, Jr.	Wheeling	Dip. Law
Kirk, Jose de Almeida	Wheeling	Soph., B.S.E.E.
Kisar, Adam Frederick	Point Pleasant	2nd Year Law
Krak, Marie Clasine	The Hague, Holland	Sen., A.B.
Kunkle, Josephine Margaret	Morgantown	Grad., A. & S.
A.B., West Virginia University, 1897.		
Kurner, David Conrad, Jr.	Wheeling	Bar Law
Lambdin, Allen Bennett	Keyser	Jun., B.S.M.E.
Lawrence, Linwood Theodore	Frankford	Fr., A.B.
Lemley, Fred Leigh	Burton	Fr., A.B.
Levy, Jay Berthrand	New Cumberland	2nd Year Law
Lewellyn, Frank Bowman	Morgantown	Soph., A.B.
Littlepage, Burrell Kemper	Charleston	3rd Year Law
Lively, Elsey L.	Roseville	Jr., B.S.Agr.
Lloyd, Wylie Everette	New Cumberland	Sen., B.S.
*Lodge, John Dunkin	Bridgeport	Fr., B.S.
Louchery, Charles Wilson	Clarksburg	2nd Year Law
Lough, William Cleveland	Cameron	Jr., B.S.
Lough, Charles Melvin	Cameron	Sen., B.S.
Macklin, Ernest Walker	Mannington	Bar Law
MacRae, John Alexander	Morgantown	Fr., A.B.
*Marr, Harold Burl	Mannington	Fr., A.B.
Martin, Cullen Guile	Clarksburg	Jun., B.S.M.E.
Martin, Truman Morris	Newell	Fr., A.B.
Maxwell, Ida Ruth	Morgantown	Soph., A.B.
May, John Dorilas	Dovesville, Va.	Jr., A.B.
McClure, Lawrence Ledwith	Wayne	2nd Year Law
McConkey, Orie	Clarksburg	Grad., A. & S.
A.B., West Virginia University, 1903.		
McConnell, Shirrell	Wheeling	Fr., A.B.
McConnell, Nellie Margaret	Sherrard	Soph., A.B.
*McCrum, Harold Bernard	Aurora	Fr., A.B.
McDonald, Brown	Sycamore	Fr., A.B.
McDonald, Logan	Sycamore	Jun., B.S.C.E.
McGarry, John Henry	Shenandoah Junc'n	Bar Law
*McGill, John Morrow	Dawson, Pa.	Fr., B.S.
McGillivray, Donald	Jackson, Ohio	Special, C.E.

McGinnis, Howard Justus	Morgantown	Soph., B.S.
McIntyre, Leslie Playford	Middlebourne	Fr., A.B.
McIntyre, Dennis Selkirk	Hepzibah	Fr., A.B.
McMinn, Thomas Roach	Jefferson, Pa.	Jun., A.B.
McMinn, Vaun	Jefferson, Pa.	Soph., A.B.
McNemar, William Vernon	Lahmansville	Fr., A.B.
Mealy, Frederick Earl	Morgantown	Soph., B.S.C.E.
Meldahl, Horace Spencer	Charleston	Fr., A.B.
Miller, Alexander	Morgantown	Soph., A.B.
Mitchell, John Barton	Scenery Hill, Pa.	Special, M.E.
Montgomery, Samuel Beauregard	Tunnelton	Bar Law
Montgomery, Allen Guy	West Liberty	Soph., B.S.
Moon, Charles	Morgantown	Grad., A. & S.
B.S.C.E., West Virginia University, 1910.		
Moon, Ada	Morgantown	Grad., A. & S.
A.B., West Virginia University, 1909.		
Moore, Susan Maxwell	Morgantown	Grad., A. & S.
A.B., West Virginia University, 1909.		
Moran, Irving Hayne	Morgantown	Sen., B.S.M.E.
*Morgan, Mont Francis	Ravenswood	Fr., A.B.
Morgan, Frederick Bruce	Ravenswood	1st Year Law
Morgan, Nancy Purley	Alexander	Sen., A.B.
Morris, James Thomas	Cassville	Jun., B.S.C.E.
†Munk, Rudolph	Connellsville, Pa.	Dip. Law
Neil, Grace Gardner	Morgantown	Jun., A.B.
Oldham, Edward Curtis	Moundsville	Sen., B.S.M.E.
Parrish, Ada Grace	Mannington	Fr., A.B.
Peck, Sarah Curran	Moundsville	Fr., A.B.
Phillips, George Francis	Belington	Soph., B.S.
Pickenpaugh, Beulah Frank	Morgantown	Jun., A.B.
Pilcher, Roy	Huntington	Fr., A.B.
Pipes, Walter Logan	Washington, D. C.	Sen., B.S.M.E.
Pitzer, Thomas Clyde	Mannington	Jun., B.S.M.E.
Pocock, Herman Diedler	Morgantown	Sen., B.S.
Poling, Herman	Philippi	Bar Law
Pool, Clark Francis	Chester	Jun., B.S.
Posten, Roscoe Parriott	Morgantown	Jun., A.B.
Powell, Grover Cleveland	Fairmont	Bar Law
Prickett, Clarence James	Fairmont	Soph., B.S.M.D.
Protzman, Dessie	Morgantown	Special, A. & S.
*Psake, Constantine George	New York City	Fr., B.S.M.D.
Pugh, Eliza Jane	Morgantown	Grad., A. & S.
A.B., West Virginia University, 1910.		

†Deceased.

Pugh, Clyde Charles	Wheeling	Jun., B.S.C.E.
Purinton, Helen Elizabeth	Morgantown	Soph., A.B.
Ramsey, Nicolas Hance	Ramsey	Soph., B.S.Agr.
Reed, Bessie Jane	West Alexander, Pa.	Soph., A.B.
Reed, Cora Elizabeth	West Alexander, Pa.	Fr., A.B.
Reed, Robert Sidney	Boothsville	Sen., A.B.
Reeves, Frank	Fairmont	Sen., A.B.
Reeves, Roscoe	Fairmont	Fr., B.S.C.E.
Reger, David Bright	Buckhannon	Sen., B.S.C.E.
Reiner, Pearl Louise	Morgantown	Sen., A.B.
Reinheimer, Melvin Herman	Fairmont	Jun., A.B.
*Reynolds, Harlan Haynes	Princeton	1st Year Law
Rhodes, Lewis Boling	Princeton	Fr., B.S.M.E.
Rider, Paul	Tunnelton	Sen., B.S.M.D.
Riddle, James Harrison	Wheeling	Jun., B.S.
*Riheldaffer, William Aschman	Charleston	Fr., B.S.M.E.
Ritchie, Eva Tibbits	Piedmont	Fr., A.B.
Robinson, Charles Stillman	Uniontown, Pa.	Soph., A.B.
Robinson, John Lowrie	Uniontown, Pa.	Sen., A.B.
Robinson, John Henry	New Martinsville	Dip. Law
Ross, Myron Albert	Morgantown	Grad., A. & S.
B. S. University Pennsylvania, 1903.		
*Ross, Nellie May	Hedgesville	Fr., A.B.
Rouchey, Verna May	Sistersville	Fr., A.B.
Ryan, Lonnie Watterson	Morgantown	Sen., B.S.
Ryan, John Donald	Morgantown	Soph., A.B.
Sander, Christian	Wheeling	Fr., B.S.E.E.
Sander, Frank Vanderslice	Wheeling	Jun., B.S.
Sanger, Samuel Henry	Sanger	Sen., B.S.M.E.
*Savage, Fred Cameron	Charleston	Fr., B.S.
Scaggs, Fisher	Wayne	Bar Law
Scott, Pearl	Pennsboro	Special, A. & S.
Sell, William Osborne	Charleston	Fr., B.S.C.E.
Sheets, Earl Wooddell	Lost Creek	Jr., B.S.Agr.
Sheets, Goldie	Morgantown	Sen., A.B.
Sheets, Lucie Wood	Wellsburg	Fr., A.B.
*Shirkey, Wilbur Fiske, Jr.	Malden	Fr., B.S.M.D.
Shores, Henry Gassaway	Keyser	3rd Year Law
Shriver, Forest Oral	Morgantown	Fr., B.S.M.E.
Shriver, Herma Susanna	Morgantown	Fr., A.B.
Shunk, Ivan Vaughn Detweiler	Morgantown	Soph., A.B.
Sigler, Landon James	Sutton	Bar Law
Simonds, Everett James	University Pl., Neb.	Grad., A. & S.
B.S., Nebraska Wesleyan University, 1905.		

Simonds, Fern Atkins	University Pl., Neb.	Grad., A. & S.
B.S., Nebraska Wesleyan University, 1904.		
Six, Lida Jane	St. Cloud	Soph., A.B.
Skinner, Dean Cook	Morgantown	Soph., B.S.M.E.
Sloan, Charles Elonzo	Meadville	Fr., B.S.C.E.
*Smith, Ajax Telemon	Princeton	Fr., A.B.
Smith, Susan Louise	St. Marys	Jun., A.B.
Smith, John Lorentz	Buckhannon	Bar Law
Smith, Arley Ellis	Parkersburg	Fr., A.B.
Smith, Boyd Milford	Elkins	Grad., A. & S.
LL.B., West Virginia University, 1910.		
*Smith, Ida Wells	St. Marys	Fr., A.B.
Smith, Leola May	Morgantown	Jun., A.B.
Smith, Edith Scott	Morgantown	Jun., A.B.
Smith, Fred Manning	Morgantown	Soph., A.B.
Speare, Wilma Carrie	West Liberty	Fr., A.B.
Spear, Edgar Boyle	Morgantown	Soph., A.B.
Spiker, Claud Carl	Masontown	Jun., A.B.
Staats, Carter Willard	Skidmore	Bar Law
*Stanard, Oliver Huffman	Enon	Fr., B.S.Agr.
Starbuck, William Henry	Parkersburg	Soph., M.E.
Starcher, George Columbus	Weston	Sr., B.Agr.
Stealey, Louise	Clarksburg	Soph., A.B.
Stealey, Genevieve	Clarksburg	Sen., A.B.
Steele, Harriet Effie	Morgantown	Jun., B.S.
Steele, Francis Willard	Morgantown	1st Year Law
*Stehley, John Alexander	Keyser	Fr., B.S.M.E.
Stemple, Forrest Wilbur	Morgantown	Grad., A. & S.
A.B., West Virginia University, 1908.		
Stewart, John Lawrence	Morgantown	Fr., B.S.
*Stoops, Lowry McElvain	Bellaire, Ohio	Fr., B.S.
Straton, Joseph Butcher	Williamson	Bar Law
*Strickler, Robert Mann	Morgantown	Fr., A.B.
Stulting, Harry Cooper	Alderson	Sr., B.S.C.E.
*Sturgiss, Anna Gans	Morgantown	Fr., A.B.
Sydenstricker, Harry Sydney	Morgantown	Soph., B.S.Agr.
Sydenstricker, Carl Raymond	Morgantown	Fr., B.S.M.E.
Sydenstricker, Lawrence Elbert	Morgantown	Fr., B.S.M.E.
Tapp, Marion Ethel	Morgantown	Jun., A.B.
Taylor, George Edmond	Morgansville	Soph., B.S.C.E.
Taylor, Roscoe Shirley	Morgantown	Soph., B.S.
Taylor, Blake	Elkins	Special, C.E.
Taylor, Marvin Lucius	Elkins	Jr., B.S.C.E.
*Teter, Dwight Hall	Philippi	Fr., A.B.
*Teter, Charles Wilson	Philippi	Fr., A.B.

Tetrick, Claude Spray	Enterprise	Sen., B.S.C.E.
Thacher, William Reynolds	Williamsburg	Sen., A.B.
Thayer, Ralph Thomas	Oakland, Md.	Sen., B.S.C.E.
Theakston, Pauline	Morgantown	Jun., A.B.
*Thornhill, William Francis	Belington	Fr., B.S.M.E.
Thrasher, Henry Wood	Mt. Crawford, Va.	Fr., B.S.C.E.
Tickle, Thomas Gooch	Bluefield	Fr., B.S.
Tracy, Benjamin Franklin	Wheeling	Soph., B.S.M.E.
Trent, William Woodson	St. Albans	Sen., A.B.
Tucker, Harrison Roy	Fairmont	Fr., B.S.
*Tuckwiller, Eugene Anthony	Lewisburg	Fr., A.B.
Tuckwiller, Edward Hill	Morgantown	Sen., A.B.
Tuttle, Rena Frances	Morgantown	Grad., A. & S.
A.B., West Virginia University, 1910.		
Twyford, George Truman	West Union	Sen., B.S.E.E.
Tyler, Emory Ledrew	Keyser	Bar Law
Van Bibber, Cyrus Biggs	Huntington	1st Year Law
A.B., West Virginia Univeristy, 1909.		
Vance, Joseph Cochran	Morgantown	2nd Year Law
A.B., West Virginia University, 1910.		
Vandevort, Hu Swisher	Morgantown	Sen., B.S.
Vandevort, John Paul	Morgantown	Soph., B.S.
VanGilder, Elmer French	Morgantown	Jun., B.S.
VanGilder, Zoe Wade	Morgantown	Soph., A.B.
Vass, Thurman Elroy	Bluefield	Soph., B.S.M.D.
Vieweg, George Bowers	Wheeling	Jun., B.S.M.E.
Walkup, Lepps Allen Homer	Falling Springs	Jun., B.S.M.D.
Wanamaker, John	Leechburg, Pa.	Fr., A.B.
Warden, Rhea Watson	Grafton	Jun., A.B.
Warrick, Edith Gretchen	Morgantown	Fr., A.B.
Waters, Gladys Mary	Morgantown	Jun., A.B.
Watkins, Miflin Marsh	Wheeling	1st Year Law
Weeks, William Seward	Washington, D. C.	1st Year Law
*Wellman, Clyde Anderson	Huntington	1st Year Law
*Weltner, Fred Paul	Brandonville	Fr., B.S.M.D.
Wheat, Harry Grove	Davis	Jun., A.B.
White, Wilson Henry Stout	Cowen	Jr., A.B.
White, Horance Laban	Bristol	Sr., A.B.
White, Janie Ruff	Lewisburg	Fr., B.S.
*White, William Forrest	Clarksburg	Fr., A.B.
*Whiting, Hunter	Glenville	Fr., A.B.
Wiestling, Helen Merwin	Wheeling	Sen., A.B.
Wilkinson, John Benjamin	Logan	Bar Law

Williams, Glen Foster	Clarksburg	Fr., LL.B.
Williams, Arthur Robert	Tunnelton	1st Year Vet. Sci.
Williams, Edgar	Morgantown	Fr., A.B.
Wilmoth, Emily Josephine	Elkins	Sen., A.B.
*Wilson, Adda Virginia	Sistersville	Fr., A.B.
Wilson, Stella Rebecca	Harrisville	Sen., A.B.
*Wilson, Stanley Bruce	Moundsville	Fr., A.B.
Wilson, Otis Guy	Elkins	Grad., A. & S.
A.B., West Virginia University, 1907.		
Wilson, Lewis Leitch	Winifrede	Soph., B.S.M.E.
*Winnette, Ethel Moss	Cameron	Fr., A.B.
Wolfe, Viola Amanda	Wheeling	Sen., A.B.
Woodford, Alberta	Morgantown	Soph., A.B.
*Wright, Max, Jr.	Ceredo	Fr., A.B.
Wyatt, John Benjamin	Shinnston	2nd Year Law
York, John, Jr.	Kenova	Soph., B.S.
Yount, Carl Crossman	Morgantown	Jun., A.B.

THE UNIVERSITY COLLEGES—SUMMARY OF ENROLLMENT FOR 1909-1910

(as far as reported May 1, 1910)

THE COLLEGES	CANDIDATES FOR Degrees								Diplomas or Certificates			Special Students			Total Number of Students		
	Grad.	Sen.	Jun.	Soph.	Fr.	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total
Arts and Sciences	18	39	45	45	97	149	95	244	....	....	....	6	5	11	155	100	255
Engineering	....	19	14	13	32	78	....	78	....	....	....	3	....	3	81	.....	81
Agriculture	....	3	4	4	4	15	....	15	....	....	....	2	....	2	17	.....	17
Law	....	5	15	20	5*	45	....	45	4	....	4	25	....	25	74	.....	74
Medicine	....	1	3	7	6	17	....	17	....	.....	....	....	....	....	17	.....	17
Total	18	67	81	89	144	304	95	399	4	....	4	36	5	41	344	100	444

*These students are taking the academic year in Law. See page 185.

STUDENT ENROLLMENT BY STATES

West Virginia	412
Pennsylvania	14
Ohio	5
New York	1
Maryland	2
Iowa	1
Oklahoma	1
Tennessee	1
Nebraska	2
Washington, D. C	2
Virginia	1
Holland	1
Porto Rico	1
India	1

NUMBER IN FACULTY

Professors Emeritus	2
Professors	39
Associate Professors	6
Assistant Professors	3
Instructors	12
Assistants	4
Library staff	5
Total	66

STUDENT ASSISTANTS

The following students, though not regularly appointed as members of the teaching force of the University, acted as laboratory assistants during the year:

In the Department of Chemistry:

FRANK VANDERSLICE SANDER and JULIUS HENRY HEFKE

In the Department of Civil Engineering:

CHARLES ELONZO SLOAN

In the Department of Mechanical Engineering:

GEORGE HAROLD CUMMINS, EDWARD CURTIS OLDHAM, SAMUEL HENRY SANGER, and GEORGE TRUMAN TWYFORD

In the Department of Physical Training:

GEORGE WALTER GROW, HERMAN DIEDLER POCOCK, FRANK VANDERSLICE SANDER, ELMA PEARL COMPTON, and HELEN M. DEBERRY

In the Department of Physics:

JOSEPH KRAUSE GRUBB

In the Department of Zoology:

HERMAN DIEDLER POCOCK

WEST VIRGINIA UNIVERSITY

CATALOGUE
1910 - - - 1911

ANNOUNCEMENTS
1911 - - - - 1912

THE SCHOOLS.

MORGANTOWN, WEST VIRGINIA
PUBLISHED BY THE UNIVERSITY

ALLIED PRINTING TRADES UNION LABEL COUNCIL WHEELING

WHEELING NEWS LITHO. CO. · WHEELING

UNIVERSITY CALENDAR

1911

September 25, Monday.....Fall Quarter Begins
September 25, 26, 27, Monday, Tuesday, and Wednesday.....
Entrance Examinations
September 25, 26, 27, Monday, Tuesday, and Wednesday.....
Matriculation and Registration of Students
September 28, Thursday.....Recitations of Fall Quarter Begin
September 28, Thursday, 8:00 P. M.....Fall Convocation
November 30 to December 3.....Thanksgiving Recess
December 15, Friday.....Last Recitations of Fall Quarter
December 18, Monday, to December 20, Wednesday, inclusive...
Final Examinations of Fall Quarter
December 21, Thursday, to January 2, 1912.....Quarterly Recess

1912

January 3, Wednesday (Registration Day)....Winter Quarter Begins
January 4, Thursday.....Recitations of Winter Quarter Begin
January 4, Thursday, 8 P. M.....Winter Convocation
February 22, Thursday.....Washington's Birthday, a Holiday
March 22, Friday.....Last Recitations of Winter Quarter
March 23, Saturday, to March 26, Tuesday.....
Final Examinations of Winter Quarter
March 26, Tuesday.....Winter Quarter Ends
March 27, Wednesday, and March 28, Thursday.....Quarterly Recess
March 29, Friday (Registration Day).....Spring Quarter Begins
April 1, Monday.....Recitations of Spring Quarter Begin
April 1, Monday, 8 P. M.....Spring Convocation
May 30, Thursday.....Memorial Day, a Holiday
June 11, Tuesday.....Last Recitations of Spring Quarter
June 12, Wednesday, to June 15, Saturday, inclusive.....
Final Examinations of Spring Quarter
June 19, Wednesday.....Commencement

STATE BOARD OF CONTROL

JAMES S. LAKIN, PRESIDENT.....Charleston
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JOHN A. SHEPPARD.....Charleston
L. V. REED, SECRETARY.....Charleston

STATE BOARD OF REGENTS

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OFFICERS OF THE UNIVERSITY

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WAITMAN BARBE, LITT.D., DIRECTOR OF THE SUMMER SCHOOL

SUSAN MAXWELL MOORE, A.B., DEAN OF WOMEN

ALFRED JARRETT HARE, A.M., REGISTRAR

ALEXANDER REID WHITEHILL, PH.D., BURSAR

DAVID DALE JOHNSON, A.M., EDITOR OF THE UNIVERSITY BULLETIN

W. J. WHITE, ACCOUNTANT

INSTRUCTORS

IN THE SCHOOLS OF MUSIC AND FINE ARTS

LOUIS BLACK — Madera Hotel

Director of the School of Music and Head of the Department of Vocal Music.

Pupil of William L. Whitney, Oreste Bimboni, and Vincenzo Lambardi; Graduate, New England Conservatory, Boston, 1898; Student, New England Conservatory School of Opera, 1897-1901. Instructor, New England Conservatory, 1898-1904; Associated with Lombardi in Italy, 1904; Instructor, Whitney International School, 1904-6; Head, Vocal Department, East Greenwich Academy, 1905-6; Head, Vocal Department, Beaver College, 1906-9; present position since 1909.

WILLIAM JACKSON LEONARD — 36 Uuniversity Driveway

Head of the Department of Fine Arts

Student, The Cowles Art School, Boston, 1889-90; Pupil of Jean Paul Laurens and Benjamin Constant, Paris, 1891-3; Student, Academie Julien and Ecole des Beaux Arts, Paris; Special student, Harvard University. Instructor in Fine Arts, West Virginia University, 1900-2; present position since 1902.

EVA EMMA HUBBARD — 265 Academy Square

Instructor in Drawing and Painting

Graduate, Morgantown Female Seminary, 1876; Student in Mrs. I. P. Wilkinson's Studio, Wheeling, 1881-2. Instructor in Drawing and Painting, Wheeling Female College, 1883-4; Student in Carl Hecker's Art School, New York City, 1884-5; Instructor in Fine Arts, Mountain Lake Park Summer Chautauqua, 1885-8; Instructor in Drawing and Painting, Mrs. M. Stevens Hart's School for Young Ladies, 1894-7; present position since 1897.

GRACE MARTIN SNEE, B.M. — 649 Spruce Street

Instructor on the Piano and Pipe Organ

Graduate, Virginia College for Young Ladies, 1893; B.M., *ibid.*, 1894. Instructor in Piano Department, *ibid.*, 1893-4; Graduate student, Peabody Institute, Baltimore, 1895-6; Assistant on the Piano, West Virginia University, 1897-1901; present position since 1901.

RUDOLF WERTIME — 220 Prospect Street

Head of Piano Department

Pupil in the Royal High School of Music, Berlin, 1894-8, under Professor Raif, Bargiel, Wolff, and Von Herzogenberg. Teacher in the Clinton Liberal Institute, New York, 1898-1900; Graduate work with the Conrad Ansorge, Berlin, 1900-1; Piano studio in Boston, 1901-3; Instructor on the Piano, West Virginia University, 1903-9; present position since 1909.

MARGARET WINTON HORNE — President's House

Instructor in Violin

Pupil of Dr. Joachim and Professor Halir, Hochschule, Berlin, and Professor Sevcik, Prague.

W. A. MESTREZAT 57 Bridge Street, South Morgantown

Assistant in Music (Wind Instruments)

Pupil of W. H. Stowe, G. Oeschsle, and F. B. Heubner. Member 21st United States Infantry Band; Chief Musician, 1st West Virginia Volunteer Infantry, in Spanish War, and 30th United States Volunteer Infantry, in Philippines; present position since 1902.

HELEN LOVELAND TREAT 353 Wilson Avenue

Assistant in Music

Artists' Diploma, School of Music, West Virginia University, 1908. Present position since 1908.

FLORA RAY HAYES, A.B. 480 High Street

Assistant in Music

Graduate, West Virginia University School of Music, 1904; Pupil, John Porter Lawrence, summer of 1905; Pupil at Berlin, Germany, under Barth, Scharwenka, and Hugo Kaun, 1905-6. Head of Music Department, Marshall College, 1907-9; present position since 1911.

THE SCHOOL OF MUSIC

BUILDING AND EQUIPMENT

The school now occupies the entire upper floor of Woodburn Hall, which contains well appointed rooms, supplied with pianos and other accessories. A new recital hall, seating 400 people, has been provided for lectures and students' recitals.

Comencement Hall, seating 1,500 people, contains a magnificent three-manual pipe organ, tubular pneumatic—built upon the universal wind-chest system and containing 76 stops and mechanical accessories. This organ, which receives power from an electric motor, is available for practice.

CONCERTS AND RECITALS

FACULTY CONCERTS

Faculty concerts are given at least three times a year, the last of the yearly series being the Commencement concert. All the members of the School of Music Faculty participate in these concerts, though occasionally one member may give an individual recital.

STUDENT CONCERTS

A student's concert is held each week during the school term. These concerts vary in grade from elementary to graduate and post graduate recitals. The object is to afford opportunity for the student to apply in public the proficiency that has been developed in the studio.

CHORAL SOCIETY SERIES

A series of choral society concerts, usually four in number, affords students an opportunity not only of singing the choral works of the great masters but also of hearing the solo artists who are engaged.

Usually two of these concerts are given entirely by visiting artists,

both instrumental and vocal, the other two being given by the Society assisted by visiting artists.

THE CHORAL SOCIETY

All students of the University who can sing are admitted to the choral society upon payment of fifty cents, the membership fee. For those who are not students the fee is $1.00. These dues admit the members to all concerts of the choral society series.

GENERAL ANNOUNCEMENTS

Students may enter the School of Music at any time, but it is greatly to their interest to enter, as far as possible, at the beginning of the quarter.

Students entering within the first two weeks of a quarter will be charged for full quarter; after that time, for the remainder of the quarter and one week additional.

There is no deduction made for lessons missed by students except in case of prolonged illness, when the loss is divided equally between the student and the school.

Students of the School of Music are not allowed to take part in public programs or in musical organizations without the consent of their respective teachers and the director of the school.

All music students are expected to attend the regular students' recitals, and to take part in them whenever so assigned, and to attend all concerts given under auspices of the University. They are expected to identify themselves with the various organizations of the school, and are required to enter any to which they are assigned by the director.

It is expected that all students will take sufficient work—literary or musical or both—to occupy their entire time.

CREDIT FOR MUSIC ON COLLEGE COURSES

Credit towards the degree of Bachelor of Arts will be given for courses in the theory and the history of music, not to exceed two and one-half in number.

COURSES OF STUDY

The School of Music offers instruction in the following subjects: Voice, piano, violin, organ, accompanying, chamber music, orchestra, band music, sight-reading, harmony, counterpoint and history of music.

In voice, piano and violin two courses are offered, one of three years, leading to a teacher's certificate, and one of four years, leading to an artist's certificate.

REQUIREMENTS FOR ADMISSION

No student can be classified in the collegiate courses in music without passing an examination in solfeggio, or demonstrating to the satisfaction of the head of the department the ability to read music of moderate difficulty, and giving evidence of the mastery of the elements of music.

In the preparatory courses, to which children only are admitted, no previous knowledge of music is required.

REQUIREMENTS FOR GRADUATION

GENERAL REQUIREMENTS

Candidates for a teacher's certificate in any of the three courses mentioned above must have satisfactorily completed a year's work in High School English or its equivalent. They must also have completed courses 1 to 6 in the theory of music and courses 7, 8, and 9 in the history of music.

Candidates for an artist's diploma in any course are required to give a graduating recital. Artistic finish and quality of performance in this recital are decisive factors in determining the award of this diploma.

VOICE

Candidates for the teacher's certificate in vocal music, in addition to the above general requirements, must have satisfactorily completed the three-year course in voice as outlined below, and must possess the ability to perform acceptably selections from the standard oratorios and operas. They must also have completed three courses (one year) in each of the modern languages—French, German, and Italian.

Candidates for the artist's diploma in voice must satisfy all the general requirements and the requirements for the teacher's certificate, and must have completed the fourth year's work in vocal music.

PIANO

Candidates for the teacher's certificate in piano, in addition to the general requirements, must have satisfactorily completed the three-year course outlined below, including compositions covering the classical and romantic periods, and also the lighter works of some modern composers. They must also have satisfactorily completed the course in ensemble playing.

Candidates for the artist's diploma in piano, in addition to the general requirements and the work required for a teacher's certificate, must have completed the four-year course in piano and the course in counterpoint. Particular emphasis is placed upon the graduation recital for students in the piano course.

VIOLIN

Candidates for the teacher's certificate in violin, in addition to the general requirements, must have satisfactorily completed the three-year course in violin music as outlined below, including the concertos of Viotti, Rode, and Kreutzer, and the lighter works of some modern composers.

Candidates for the artist's diploma, in addition to the general requirements and the work required for the teacher's certificate, must have completed the four years' work in violin music. They must also have some knowledge of piano playing.

Students desiring to become candidates for certificates or diplomas should note that while the above mentioned courses are referred to as three-year and four-year courses, no definite period of time can be assigned for their completion. In all cases certificates and diplomas are awarded on the basis of the proficiency acquired, rather than of the length of time devoted to the course.

DEPARTMENTS OF INSTRUCTION

Strict adherence to a fixed list of studies is not required. The needs of the individual student are considered and the studies varied accordingly. New works are carefully examined by the musical directors and those of value are adopted. An idea of the work covered in the different classes may be obtained from the following.

VOICE

MR. BLACK

The following is a general outline of work for a student taking only technical work—that is, vocal lessons alone.

First Grade—Technique; scales, arpeggios, etc.; vocalises, Panofka and Concone, Vaccai and Marchesi in Italian. Simple songs in Italian and English.

Second Grade—Technique; scales, Lutgen, Concone, Lamperti, Panofka, etc., Vannuccini in Italian; songs in Italian and English. Ensemble; duets, trios and quartets.

Third Grade—Technique; Bona, Lutgen, Concone, Bordogni, etc., Arias from standard grand operas and oratorios. Ensemble.

Fourth Grade—Technique; Bona, Lamperti, Concone, Aprile, etc., advanced. Oratorio roles, scenes from operas, various songs and arias in preparation for individual recitals. Ensemble.

Sight Reading

A sight-reading class meets for one hour each week, and in this is offered some preliminary work in harmony and notation in their particular relation to singing. This instruction is free to vocal students, and required of them; but to those of other departments a charge of five dollars for the year is made.

PIANO

MR. WERTIME, MRS. SNEE, MISS MOORE, MISS HAYES, and MISS TREAT

The course in this department is intended to meet the varying needs of the individual pupils, with the idea of furnishing a comprehensive, rather than a rigid, inelastic, training in piano-forte technique. While the acquirement of finger dexterity is necessary, the value and importance of the mental training to be obtained from the study of music is emphasized, and the course is expected to make apparent the advantage of a broad musical education.

The course required of candidates for teacher's certificates or artist's diplomas comprises compositions from the following masters: Bach, Haendel, Haydn, Mozart, Beethoven, Schubert, Weber, Men-

delssohn, Schumann, Chopin, Henselt, Liszt, Rubenstein, Brahms, Greig, Saint-Saens, Moszkowski.

Preparatory Piano Course

The School of Music offers a well organized preparatory course, presided over by Miss Susan M. Moore. The beginners' class has two sessions a week, one on Saturday morning, and one on Wednesday afternoon, after school hours. Pupils generally remain in this course for two years, at the end of which time it becomes necessary to give them more individual attention. Children in this department are taught sight-reading, transposition, and ensemble playing. They are required to do black-board exercises, and to have a thorough course in ear training.

VIOLIN

Miss HORNE

The mastery of the violin, requiring, as it does, years of specialized effort, tends to restrict students in their musical studies. This course aims to give a thorough training in all the essentials of violin playing, and at the same time to pave the way to a broader, more general culture, which is a part of the true musician's education.

The course required of candidates for the teacher's certificate comprises violin schools by David, Spohr, Sevcik; elementary studies and exercises by Wohlfahrt, Dancla, Hermann, Kayser; etudes by Mazas, Kreutzer, Florillo, Rode; selections from De Beriot, Wieniawski, Viotti, Rode, etc.

The course required of candidates for the artist's diploma comprises, in addition to the above, Bach sonatas, concertos by Mendelssohn, Molique, Spohr, Kreutzer, Bruch, etc.

Preparatory Violin Course

A course in violin instruction is offered for children, corresponding to the courses of a similar nature in the piano department. Children who have had no training in music are admitted to this class.

PIPE ORGAN

Mrs. SNEE

The organ course is intended to provide a thorough and complete education in the work of a church organist and accompanist.

Students are required to take some studies on the piano before entering the organ school.

WOOD AND BRASS INSTRUMENTS

Mr. MESTREZAT

Opportunity is offered in this course to obtain the instruction necessary to fit one to play the various wood-wind and brass instruments used in orchestras and bands.

ENSEMBLE

Miss HORNE

1. Lessons in Accompanying. This course is intended to furnish opportunity to advanced students to acquire the art of accompanying songs, violin and cello solos.

2. Chamber Music. The study of sonatas, trios and quartettes by Bach, Beethoven, Mozart, Haydn, Mendelssohn, Gade, etc. Open to violinists, 'cellists, pianists and viola players. A preparatory class is also offered, the works to be studied including trios by Reinecke, Bohm, Haydn, and Hellmsberger.

3. Orchestra Music. A study of the usual orchestral works and of accompaniments of pianoforte and violin concertos.

CHORUS SINGING

Mr. BLACK

The choral society meets for rehearsal once each week, and affords opportunity to obtain the pleasure and benefit of chorus singing as well as to acquire familiarity with the field of choral work.

THEORY OF MUSIC

Miss HAYES

1. **Harmony.** One-third credit.
2. **Harmony.** One-third credit.
3. **Harmony.** One-third credit.
4. **Counterpoint.** One-third credit.
5. **Counterpoint.** One-third credit.
6. **Analysis.** One-third credit.

HISTORY OF MUSIC

Miss HAYES

7. History of Music. Classic music. One-third credit.
8. History of Music. Romantic music. One-third credit.
9. History of Music. Modern music. One-third credit.

MODERN LANGUAGES

The close relation of the modern languages with music, and especially with vocal music, makes them important in every course of musical study. The inexhaustible and ever-increasing treasure of vocal music composed to German, French, and Italian texts makes a fair knowledge and correct pronunciation of these languages indispensable. The University offers superior advantages for the study of these languages.

TUITION PER QUARTER

The following table shows the rates of tuition for private lessons of thirty minutes in length:

	Number of lessons per week		
	One	Two	Three
Voice:—			
LOUIS BLACK	$15.00	$25.00	$35.00
Piano:—			
RUDOLF WERTIME	15.00	25.00	35.00
GRACE MARTIN SNEE	11.00	18.00	26.00
SUSAN MAXWELL MOORE	11.00	18.00	26.00
FLORA RAY HAYES	10.00	16.00	23.00
HELEN LOVELAND TREAT	6.00	10.00	
Violin:—			
MARGARET HORNE	11.00	18.00	26.00
Pipe Organ:—			
GRACE MARTIN SNEE	15.00	25.00	
Wood and Brass Instruments:—			
WALTER MESTREZAT	8.00	12.00	

Ensemble Classes:—

Accompanying lessons ..... $8.00 per term.—
Chamber Music Class ..... $4.00 per term.—$10.00 per year.
Orchestral Class ..... $2.00 per term.—$ 5.00 per year.

Theory:—

For two class lessons per week, of thirty minutes each, the tuition is:

In harmony $12.00
In theory and musical history..... 10.00
The tuition for other classes is as follows:
Sight reading (one lesson a week)..... $2.00
per term—$5.00 per year.
Preparatory piano music..... 7.50
(Classes of four pupils)
Preparatory violin music..... 7.50
Public school music..... 7.50

Piano for practice, one hour per day, will be furnished at $3.50 per quarter; two hours per day, $6.00 per quarter; three hours per day, $8.00 per quarter; four hours per day, $10.00 per quarter. Clavier practice, one hour per day, $3.00 per quarter.

Pipe organ practice, one hour per day, $7.00 per quarter.

No contingent fees are charged music students who take conversational French, German, or Italian, as required for their diplomas in music.

Music students who are residents of West Virginia, and who take work in other departments of the University, are subject to the usual charges for fees in these departments.

Any student in the School of Music who is not a resident of West Virginia, and who pays at least $16.00 a term for music, is permitted to take, in addition to music, one credit course each term free of charge, or two credit courses at one-half the usual charge; but in either case such student shall pay the matriculation fee of $5.00 upon first entering the academic department, and the contingent fee of $2.00 each term.

The fee for a diploma or teacher's certificate is $3.00.

Regularly enrolled students in the School of Music are required to pay the following athletic fees: for the Fall term, $2.00; for the Winter term, $1.00; for the Spring term, $2.00.

THE SCHOOL OF FINE ARTS

EQUIPMENT

The University provides large, well lighted studios, containing drawing stands, easels, etc., and a large collection of casts, and models. Students have access to the University library, which contains a large and carefully selected collection of works on the history and development of the fine arts.

FEES

The regular classes in drawing and the history of art are open without charge to all students of the University, but in the special drawing and painting classes fees are charged, as follows:

For one quarter, three lessons weekly:

Special drawing	$ 5.00
Water color	10.00
China painting	10.00
Pastel painting	10.00
Oil painting	10.00

Students whose work is entirely in this school, and who take private work only, are not required to pay the usual University fees, but are entitled to all the privileges of the other University students —library, lectures, etc. Fees are payable in advance to the bursar of the University for the art fund.

THE REGULAR ART COURSE

This course of four years is so planned that the student may acquire the technique of drawing and painting, a general art education, and a degree of aesthetic culture tending to develop the individual powers of composition and expression.

The work of the first year includes light and shade drawing from the antique, study of perspective, sketching from nature, drawings of still life, and study of form carried out in clay modeling. Color studies are introduced in the spring term.

In the second year the drawing is continued from cast in charcoal and crayon, copying the head, mask, and ornament from the antique. Color studies in water-colors and oil are given with the work in black and white.

During the third and fourth years, the student copies the bust and full length figure from the antique, paints from the draped model in the life class, and studies portrait painting and composition or sketching from nature, and landscape painting.

REQUIREMENTS FOR DIPLOMA

To those who complete this course of four years' study, making oil painting their major study and including the history of art, a diploma will be given.

ART COURSE FOR TEACHERS

This course is designed for teachers in public or normal schools. It comprises free-hand drawing of ornament, mask, and head from the antique; study of still life, perspective and mechanical drawing; sketching; study of design; study of color and form developed in water-color painting and clay modeling.

Class lectures are given on the teaching of form and color, and the history of art.

Students should spend two years in pursuing this course; but to suit individual needs, the course may be shortened, and what is most essential will be given in the time available.

CREDIT FOR FINE ARTS ON COLLEGE COURSES

Credit toward the Degree of Bachelor of Arts will be given for courses in Fine Arts not to exceed five in number.

COURSES OF INSTRUCTION

Associate Professor LEONARD

1. Elementary Drawing. The historic forms of art and their development. Lectures, with collateral reading and practice in drawing. Fall, 930; L.

2. Elementary Drawing. A continuation of course 1. Winter, 9:30; L.

3. Elementary Drawing. A continuation of course 2. Spring, 9:30; L.

16. Elementary Drawing. For students in the College of Agriculture only. Two-fifths credit. Fall, Monday and Wednesday; 1:30 L.

4. Advanced Drawing. Historic periods of architecture, sculpture, and painting. Lectures, with collateral reading and practice in drawing. Fall, 10:30; L.

5. Advanced Drawing. A continuation of course 4. Winter, 10:30; L.

6. Advanced Drawing. A continuation of course 5. Spring, 10:30; L.

7. The History of Greek Art, with a consideration of the arts of Egypt, Assyria, and Phoenicia, in their relation to Greek art. Fall, 8:30; L.

8. The History of Mediaeval and Modern Art, with special consideration of the Renaissance period. Winter, 8:30; L.

17. Public School Drawing. Spring, 8:30; L.

MRS. HUBBARD

9. Perspective Drawing. Elementary study of linear perspective; principles of geometrical forms and familiar objects. Honey's Linear Perspective. Fall, 11:30; L.

10. Perspective Drawing. A continuation of course 9. Analysis of principles; development and construction of the arch. Minifie's and Spanton's Perspective. Winter, 11:30; L.

11. Advanced Perspective Drawing. A continuation of course 10. Isometric drawing; sciography; perspective applied to buildings, use of plan and perspective erection; applications to sketching and topography. Reference books, Spanton and Ware. Spring, 11:30; L.

12. Oil Painting. Color analysis and combinations; painting from still life, fruits, flowers, draperies, etc.; landscape painting; study of the draped model. Hours to be arranged; L.

13. Pastel Painting. The various studies of color and design suitable for expression in this medium; special study for pastel portraits and the draped figure. Hours to be arranged; L.

14. Water Color Painting. Study from the flat and from nature, still life, landscape or model; design from plant life and conventional; figure and portrait painting. Hours to be arranged; L.

THE SCHOOL OF AGRICUL- AND DOMESTIC SCIENCE

ORGANIZATION AND PURPOSE

The School of Agriculture and Domestic Science was created by order of the Board of Regents on October 26, 1910, and will offer its first year of regular work beginning September 25, 1911. The school is located at Morgantown, and its work is to be carried on in connection with the College of Agriculture in the University, and under the direction of the dean of that college.

The school has not been established, however, for the purpose of preparing students for entrance to the University or of competing with the high schools of the state. Its aim is to provide a practical training for the young men and women of West Virginia, who desire particularly to prepare themselves for more successful and useful life on the farm or in the home.

FACULTY

For the first year the instruction in the School of Agriculture and Domestic Science will be given for the most part by the regular faculty of the College of Agriculture with some assistance from other departments of the University.

EQUIPMENT

The laboratories and apparatus of the scientific departments of the University, and the libraries of the Agricultural Experiment Station and University are at the command of the students in the School of Agriculture. The farm of the Agricultural Experiment Station, together with its gardens, experiment plats, laboratories, and collections are available for students desiring to acquaint themselves with the practical and scientific methods of conducting agricultural operations.

ADMISSION

Students who are sixteen years of age, or over, and who have completed satisfactorily the eighth grade, will be admitted without examination. Such students should have an application blank properly filled out and signed by their teacher and sent in before registration day.

Students who have not completed the eighth grade will be expected to take an examination in Arithmetic, United States History, English Grammar, Geography, Reading, Writing, and Spelling. These examinations will be held September 19, 1911.

Applicants whose home schools do not afford adequate instruction in the common branches, or who may be have been able to complete the eighth grade, may be admitted with not more than two canditions, with the permission of the Dean, which must be removed according to instructions given the student upon admission.

Maturity of years and experience will be given due consideration, but in no instance should the student consider these sufficient to admit him. Wherever there is a question concerning the student's qualifications to enter he should confer with the Dean before coming to the University.

Upon arrival at Morgantown students should report to the office of the Dean of Agriculture, No. 6, Martin Hall, where they may register, and assistance will be furnished in securing suitable rooms and board.

THE SCHOOL YEAR

The school year consists of two quarters of twelve weeks each, commencing September 25, 1911, and closing March 22, 1912. The year is thus arranged so that young men may return to the farm in time for the spring work. A third quarter is required in the spring of the senior year.

If a sufficient number of students desire to take work in the spring quarter, March 26 to June 8, 1912, classes will be arranged for them and by attending three quarters each year they may finish the course in three years.

Instruction begins promptly at the opening of each quarter and students should be present on registration day and remain until the close of the term. Students will not be received for the work of the first quarter after October 1, except by special permission.

Special classes are arranged for students who are able to attend only the winter term.

FEES AND EXPENSES

Tuition and Fees

Tuition is free to West Virginia students. For students from other states the tuition is $10.00 per quarter.

A matriculation fee of $5.00 is payable upon entering the school by all students except those holding appointments as cadets.

The contingent fee is $2.00 per quarter and is payable by all students except those holding appointments as cadets.

All students are required to pay a regular athletic fee of $2.00 per quarter which entitles them to the use of the gymnasium.

Fees for materials used are charged in some courses involving laboratory work, as stated under those courses.

Board and Lodging

See page 31 of the University catalogue for 1910-11.

Estimated Expenses for Two Quarters

Room rent	$18.00	to	$30.00
Board	60.00	"	96.00
Washing	6.00	"	10.00
Text books	5.00	"	8.00
Contingent and athletic fees	4.00	"	6.00
Laboratory fees	2.00	"	3.00
	$95.00		$153.00

To this estimate must be added matriculation, tuition, and diploma fees, in the case of students who are required to pay them, traveling expenses, clothing, and miscellaneous expenses, which depend largely upon the tastes and habits of individual students.

MILITARY DRILL

All male students will be required to take military drill and military science during the first three years. The announcements of the military department will be found on page 191 of the University catalogue for 1910-11.

Women students will be required to take gymnasium work, in place of drill.

ATHLETICS

Students in the School of Agriculture will not be eligible to the University Athletic teams, but they will be encouraged to organize teams of their own to compete with schools of a similar grade.

REQUIREMENTS FOR GRADUATION

1. The completion of the prescribed course.

2. An essay of not less than one thousand words upon a topic connected with agriculture or home economics, typewritten on paper of approved size for binding and filed in the library.

3. For young men, a practical experience in field work on a farm, as shall appear from reports made from responsible sources, of such a nature in such a form as may be prescribed by the faculty.

A student meeting these requirements for graduation will be given a diploma, certifying that he is a graduate of the School of Agriculture.

Although the School of Agriculture is not planned as a preparatory school, its curriculum has been purposely arranged so that it may fit those students who desire to secure a higher education, to enter the College of Agriculture. Graduates of the School of Agriculture will be given credit for twelve entrance units for admission to the College of Agriculture, and may be admitted as special students with two entrance conditions. Work done in the School of Agriculture can not be counted as entrance credit in any college in the University except the College of Agriculture.

Many students will probably be able to attend but a year or two. Such students will find the work in agriculture arranged so that they may secure a maximum amount of work in the department in which they are most interested, in the time at their command. To give students who may not be able to graduate, some token of the work done, a certificate of the work completed will be given at the end of each year (or two quarters) to those who have passed all the work for which they have registered.

FOUR YEAR CURRICULUM IN AGRICULTURE

NOTE:—Numbers immediately following the subject represent the number of recitation hours per week; numbers in parenthesis give the hours spent in laboratory work.

First Year

Fall	*Winter*
English A, 5	English B, 5
Botany A, 3 (7)	Botany B, 3 (5)
Freehand Drawing A, (5)	Mechanical Drawing B, (5)
Agronomy A, 3 (2½) Farm Crops	Horticulture A, 2 (2½) Plant Propagation
Animal Husbandry A, 3 (3) Breeds of Livestock	Dairying A, 2 (7½)
Military Science	Military Science

Second Year

Fall	*Winter*
English C, 2	English D, 2
Mathematics A, 5 Arithmetic and Algebra	Mathematics B, 5 Algebra
Chemistry A, 3 (5)	Chemistry B, 3 (5)
Agronomy B, 3 (2½) Soils	Wood Shop (5)
Agronomy C, (4½) Farm Machinery	Animal Husbandry B, 3 (2½)
Forge Shop (5)	Farm Management A, 2 Farm Bookkeeping
Military Science	Military Science

Third Year

Fall	*Winter*
English E, 3	English F, 3
Mathematics C, 5 Geometry	Mathematics D, 5 Geometry
History A, 2 English History	History B, 2 English History
German A, 5	German B, 5
Entomology A, 3 (5)	Entomology B, (2½)
	Farm Management 3 (2½)

Fourth Year

Fall	*Winter*	*Spring*
English G, 4	English H, 4	English I, 4
History C, 4 American History	History D, 4 Civics	
German C, 5	German D, 5	German E, 5
Elective Agriculture, 4	Elective Agriculture, 4	Elective Agriculture, 8
Elective, 3	Elective, 3	Elective, 3

THE SHORT COURSE

The Short Course is arranged for young men who desire to study agriculture during the winter months. The course occupies the winter quarter for two years. The first year is designed to give the student a general knowledge of modern agricultural science. During the second year the student may specialize in horticulture, dairying or animal husbandry. Upon completing the two quarters a Short Course Certificate will be given, signed by the Dean of the College of Agriculture.

The entrance requirements, fees, etc., are the same as for all students of the School of Agriculture. (See page 245).

SHORT COURSE CURRICULA

First Year in General Agriculture

For all Short Course students

Horticulture A, Plant Propagation, 8:30 Tuesday and Thursday; 1:30 Tuesday.

Agronomy A, Farm Crops, 9:30 Tuesday, Wednesday, Thursday and Friday.

Agronomy B, 9:30 Monday; 10:30 Monday, Tuesday, Wednesday and Thursday.

Animal Husbandry A, Breeds of Livestock, 11:30 Tuesday and Wednesday; 1:30 Thursday and Friday.

Agricultural Chemistry, 11:30 Monday, Thursday and Friday.

Agronomy C, Farm Machinery, Saturday 8-12:30.

Second Year in Dairying

Dairying A, Farm Dairying, 11:30 Wednesday and Friday; 1:30 Tuesday, and Saturday morning.

Dairying B, Dairy Farming, 8:30 Tuesday and Thursday; 1:30 Thursday and Friday.

Dairying C, Dairy Cattle, 8:30 Monday, Wednesday and Friday; 1:30 Wednesday.

Animal Husbandry B, Feeds and Feeding, 11:30 Monday, Tuesday and Thursday.

Farm Management A, Farm Bookkeeping, 11:30 Monday, Tuesday and Thursday.

Veterinary Science B, 10:30 Monday and Friday; 1:30 Monday.

Second Year in Horticulture

Horticulture B, Small Fruits, 11:30 Wednesday, Thursday and Friday.

Horticulture C, Orchard Fruits, 8:30 Monday, Wednesday and Friday; 1:30 Wednesday and Friday.

Entomology C, Economic Entomology, 8:30 Thursday; 9:30 Wednesday, Thursday and Friday; 10:30 Tuesday and Thursday; 11:30 Monday and Tuesday.

Botany B, Elementary Agricultural Botany, Monday, Wednesday and Friday 10:30; Tuesday and Thursday 1:30.

Farm Management A, Farm Bookkeeping, 8:30 Tuesday; 9:30 Monday and Tuesday.

Second Year in Animal Husbandry

Animal Husbandry B, Feeds and Feeding, 11:30 Monday, Tuesday and Thursday.

Animal Husbandry E, Principles of Breeding, 10:30 Thursday and Friday; 1:30 Friday.

Animal Husbandry. F. Stock Judging, 1:30 Wednesday.

Animal Husbandry C, Beef Cattle, 8:30 Wednesday, Thursday and Friday; 1:30 Tuesday; Saturday morning.

Farm Management A, Farm Bookkeeping, 8:30 Tuesday; 9:30 Monday and Tuesday.

Veterinary Science A, 10:30 Monday and Friday; 1:30 Monday.

Farm Buildings, 9:30 Wednesday and Thursday.

THE FARMERS' COURSE

The Farmers' Course consists of popular lectures, demonstrations, and exercises planned for the benefit of various classes of farmers. The faculty are assisted by men who have been unusually successful, and who are known as experts in the particular line in which they give instruction. The detailed work given is changed from year to year, but the general character of the course remains the same. The course is open to farmers over 21 years of age. Some 60 farmers registered in 1911 and the work is becoming increasingly popular each year.

The course for 1912 will begin in February. Detailed announcements may be obtained upon application to the Dean of the College of Agriculture.

COURSE IN DOMESTIC SCIENCE

RACHEL H. COLWELL, in charge

The course is planned to fit women for the life of the home and the farm. Such training in the arts and sciences is given as will help to make women more efficent home makers. The work involved takes up the subject of cooking, planning of menus to suit the needs of the family, feeding in case of sickness, how to utilize the materials at hand with the least expenditure of time and strength for the best returns.

The courses in sewing train the student to make the best selection of material for the purpose intended, the making of simple clothing and the repairs necessary. Students discuss the arrangement of kitchens, their relation to adjoining rooms, determine how they may be modified, if necessary, to make them more convenient with the least expenditure of money, and the general furnishing of the house.

The keeping of household accounts is studied with special reference to teaching the students how to buy intelligently, and how to apportion the amount available to the different needs of the family and the home.

Students may elect work in dairying, farm crops, and plant propagation. Opportunity is offered in the course for a certain amount of music.

EQUIPMENT

The classes in cooking and sewing have the privilege of using the Domestic Science laboratories of the University. The laboratory for cooking is a light, airy room fitted with charts and specimens showing manufacture of the different food products and the illustrative material. The desks are fitted with individual equipment; small stoves and portable ovens. There is also a range with hood, heat indicator, side oven and boiler.

FEES

A fee of $1.50 per term is charged for the course in cooking. Students will bring their own material for the work in sewing.

CURRICULUM IN DOMESTIC SCIENCE

First Year

Fall	*Winter*
English A, 5	English B, 5
Botany A, 3 (7)	Botany B, 3 (5)
Cooking A, 1 (10)	Cooking B, 3 (4)
Sewing A, (6)	Sewing B, (6)
Music A, (4)	Music B, (4)
Gymnasium	Gymnasium

Second Year

English C, 2	English D, 2
Mathematics A, Arithmetic and Algebra, 5	Mathematics B, Algebra, 5
Chemistry A, 3 (5)	Chemistry B, 3 (5)
Cooking C, 2 (7½)	Hygiene B, 5
Hygiene A, 3	Sewing C, (7½)
Gymnasium	Gymnasium

Third Year

English E, 3	English F, 3
Mathematics C, Geometry, 5	Mathematics D, Geometry, 5
History A, English History, 2	History B, English History, 2
German A, 5	German B, 5
or Agronomy A, 3 (5)	or Dairy A, 2 (7)
Home Management 3 (5)	Home Management 3 (5)

NOTE:—Numbers after courses give number of recitations per week and numbers in parenthesis give hours of laboratory work.

For detailed description of Courses of Instruction see University Bulletin, March 1911.

For detailed information concerning the work in Domestic Science, address Miss Rachel H. Colwell, Morgantown, W. Va.

Concerning the work in Agriculture, address Dean E. D. Sanderson, 6 Martin Hall, Morgantown, W. Va.

THE SUMMER SCHOOL

THIRTEENTH SESSION, JUNE 19 TO JULY 29, 1911

THE FACULTY

DANIEL BOARDMAN PURINTON, PH.D., LL.D., *President of the University.*

WAITMAN BARBE, A.M., LITT. D., *Director of the Summer School.*

RICHARD GREEN MOULTON, A.M., PH.D., (Professor of Literature in English in the Uuiversity of Chicago) *Literature.*

O. J. KERN, (County Superintendent of Schools, Winnebago County, Illinois) *Rural and Village Schools.*

CHARLES WILLIAM KENT, PH.D., (Professor of English in the University of Virginia) *English Literature.*

MORRIS P. SHAWKEY, A.M., (State Superintendent of West Virginia) *School Administration.*

SARAH E. GRISWOLD, (Critic Teacher in the Chicago Normal School) *Observation Classes in Grammar Grades; Principles and Methods of Elementary Teaching.*

CLARA MABEL WHEELER, (Head Primary Teacher in the Horace Mann School, Columbia University) *Observation Classes in Primary Grades; Conferences in Primary Teaching.*

LILLIAN FLIEGE, (Graduate, Pratt Institute, and Supervisor of Drawing in the Davenport, Iowa, Public Schools) *Public School Drawing; Handwork; Clay Modeling.*

JASPER NEWTON DEAHL, A.M., PH.D., (Professor of Education in the University) *Education.*

JOHN LEWIS SHELDON, A.M., PH.D., (Professor of Botany and Bacteriology in the University) *Nature Study and Botany.*

ALEXANDER REID WHITEHILL, A.M., PH.D., (Professor of Chemistry in the University) *Chemistry.*

CHAUNCEY WILLIAM WAGGONER, A.M., PH.D., (Professor of Physics in the University) *Physics.*

JAMES MORTON CALLAHAN, A.M., PH.D., (Professor of History in the University) *History*

JOHN HARRINGTON COX, A.M, PH.D., (Professor of English Philology in the University) *English Literature.*

SIMEON CONANT SMITH, A.B., A.M., (Associate Professor of Rhetoric in the University) *Composition and Rhetoric.*

JOHN ARNDT EIESLAND, PH.B., PH.D., (Professor of Mathematics in the University) *Mathematics.*

FREDERICK WILSON TRUSCOTT, A.M., PH.D., (Professor of German in the University) *German.*

ALFRED JARRETT HARE, A.M., (Professor of Latin in the University) *Latin.*

L. D. ARNETT, B.S., PH.D., (Librarian of the University) *Library Science.*

E. DWIGHT SANDERSON, B.S.AGR., (Dean of the College of Agriculture in the University) *Entomology.*

ARETAS WILBUR NOLAN, A.M., (Associate Professor of Agricultural Education in the University) *Agriculture.*

ISAAC COOK, (Assistant Professor of Agronomy in the University) *Agronomy and Animal Husbandry.*

LLOYD LOWNDES FRIEND, A.M., (Associate Professor of Secondary Education in the Uuiversity) *Education.*

L. J. HANIFAN, A.M., (State Supervisor of Rural Schools) *Administration of Rural Schools.*

RACHEL HARTSHORN COLWELL, B.S., A.M., Instructor in Domestic Science in the Uuiversity) *Domestic Science.*

LOUIS BLACK, (Director of the University School of Music and Instructor in Voice) *Voice.*

MARGARET WINTON HORNE, (Instructor in Violin in the University School of Music) *Violin.*

GRACE MARTIN SNEE, (Instructor in Organ and Piano in the University School of Music) *Organ; Piano.*

FLORA RAY HAYES, (Instructor in Piano and Theory of Music in the University School of Music) *Theory of Music.*

ETHEL BORDEN BLACK, *Advanced Piano.*

FACULTY OF THE SCHOOL OF METHODS FOR SUNDAY SCHOOL WORKERS

JULY 19 TO 24, 1911

D. B. PURINTON, PH.D, *President of the University. Dean of the School of Methods.*

JOHN RICHARD SAMPEY, PH.D., LL.D., *Professor of Old Testament Interpretation, Southern Baptist Theological Seminary, Louisville, Kentucky.*

FRANKLIN McELFRESH, PH.D., *Teacher Training Superintendent, International Sunday School Association, Chicago, Illinois.*

FREDERICA BEARD, *Sunday School Institute Instructor and Author of Books on Bible Stories, Minneapolis, Minnesota.*

ARTHUR T. ARNOLD, *General Secretary of the West Virginia Sunday School Association, Wheeling, West Virginia.*

MRS. ARTHUR T. ARNOLD, *Wheeling, West Virginia.*

LILLIAN FLIEGE, *Superintendent of Public School Drawing, Davenenport, Iowa.*

M. L. WOOD, D.D., *Huntington, West Virginia.*

MARTHA V. GRAHAM, *Office and Field Worker, West Virginia Sunday School Association, Wheeling, West Virginia.*

ANNOUNCEMENTS

The Summer School for 1911 will begin June 19 and continue six weeks—until July 29. Students may enter at any time, but they are earnestly advised to be present from the beginning of the school. The Summer School, like any other term of the University, is co-educational in all of its courses.

ADMISSION

There are no requirements for admission to the Summer School unless the student desires University credit for the work to be done. In such case he must satisfy his instructors that he is prepared to take the courses selected. If he desires regular classification he must meet the regular University conditions, a statement of which may be found in the University catalogue.

CREDIT

Entrance or college credit may be had for most of the Summer School work.

Certificates setting forth the work done in the Summer School will be given to those who make application for them to their instructors at the beginning of the term. These certificates are useful to show to members of boards of education and other school officers.

The amount of credit is stated in the announcement of each course. Any change in the amount of credit work during the Summer School may be made only with the approval of the class officer and the instructor, evidence of which must be filed with the registrar by the class officer.

REGISTRATION

Students will register on Monday, June 19, with the Registrar, in the south wing of Woodburn Hall. All students, whether previously in attendance at the University or not, must register before entering the Summer School.

Work will begin promptly in all departments on Tuesday, June 20.

FEES FOR THE SUMMER SCHOOL

The entire fee for everything offered in the Summer School (excepting Music), is $2.50, whether the student be a resident of West Virginia or of some other State; provided, that if University credit for the work is desired, a matriculation fee of $5.00 must be paid, unless the student is already a matriculate of the University.

Students from States other than West Virginia who desire to obtain University credit for the summer work will also pay the following tuition: In the College of Arts and Sciences, $6.00; in the Preparatory School, $2.50.

If, however, no University credit is desired, the total fee for students from other states as well as from West Virginia will be only $2.50.

The fees in Music are stated in the announcements of the courses in that subject.

A registration fee of $1.00 is required of those who enroll only for the work of "Supervision Week" or of the School of Sunday School Methods. Students regularly enrolled in the Summer School are exempt from this fee.

In Chemistry and Domestic Science small laboratory fees will be charged to cover the cost of material used. These fees are very light.

LIBRARIES AND LABORATORIES

The library and the laboratories in chemistry, physics, domestic science, entomology, agriculture, bacteriology, and botany will be in use during the Summer School.

LIVING ACCOMMODATIONS

The Men's Hall and the Women's Hall will be open for the acommodation of students during the session of the Summer School. (See page 51). The work of providing living accommodations for young women in the Summer School will be in charge of Miss Susan Maxwell Moore, the Dean of Women, and students are requested to report to her at the Women's Hall upon their arrival. Correspondence regarding rooms and board may also be addressed to her.

Mr. E. J. Simonds, Secretary of the Y. M. C. A., has charge of the work of securing living accommodations for men. Correspondence and inquiries should be addressed to him. (See page 52).

EDUCATIONAL CONFERENCE

The ninth annual two-days Educational Conference, under the auspices of the University Summer School, will be held Friday and Saturday, June 30 and July 1, in Commencement Hall. The topic this year will be "Teachers' Institutes."

All persons interested in this topic are cordially invited to be present and take part in the discussions. These educational conferences have proved to be of great importance in their relation to West Virginia educational questions. The topic this year is likely to prove of unusual interest. Moreover, the conference is to come at the close of "Supervision Work," when many supervisors of rural schools from other states, besdes those from West Virginia, will be present.

FREE MUSICAL RECITALS AND MATIN SERVICE

Six lectures recitals, under the direction of the School of Music, will be given—one each week. Great composers will be briefly discussed and their works interpreted with voice, piano, violin or organ by Professor Black, Miss Horne, and others. These delightful recitals, given every summer, constitute one of the most enjoyable features of the Summer School. They are free to students and the public.

A brief chapel service will precede these music recitals. They will be held every Wednesday at 11 o'clock in Commencement Hall. During that hour no other exercises will be held in any department of the Summer School.

SUMMER SCHOOL CONVOCATION

The convocation exercises of the Summer School will be held Tuesday evening, June 20, at 8:30 o'clock, in Commencement Hall. The convocation address will be delivered by Dr. Richard Green Moulton, of the University of Chicago. Music will be furnished by the School of Music.

For information concerning any department of the Summer School, write to the Director,

Waitman Barbe, Morgantown, W. Va.

SCHEDULE OF COURSES BY HOURS

8:00 A. M.

Literature in the Grades—J. H. Cox.....32 W.
Botany—J. L. Sheldon.....N. F.
Agronomy—Isaac Cook..... 3 M.
Development of Modern History—J. M. Callahan.....30 W.
Elementary Latin—A. J. Hare.....12 W.
Principles and Methods of Teaching—Sarah E. Griswold.....14 M.
Preservation of Food—Rachel H. Colwell..... 2 W.
Elementary German—F. W. Truscott.....18 W.

9:00 A. M.

Studying and Learning and Teaching—J. N. Deahl.....12 M.
High School Administration—L. L. Friend.....19 W.
Shakespeare—J. H. Cox.....32 W.
High School Literature—S. C. Smith.....13 W.
Nature Study—J. L. Sheldon.....N. F.
Entomology—E. D. Sanderson.....
Algebra—J. A. Eiesland.....16 W.
Library Records—L. D. Arnett.....Library
Cicero's de Senectute—A. J. Hare.....12 W.
Elementary Agriculture—A. W. Nolan.....11 W.
Intermediate German—F. W. Truscott.....18 W.

10:00 A. M.

Studying and Learning and Teaching—L. L. Friend.....12 M.
Nature Study in the Poets—J. H. Cox.....32 W.
Composition—S. C. Smith.....13 W.
Nature Study—J. L. Sheldon.....N. F.
Animal Husbandry—Isaac Cook..... 3 M.
The United States as a World Power—J. M. Callahan.....30 W.
Plane Trigonometry—J. A. Eiesland.....16 W.
Library Economy—L. D. Arnett.....Library
Caesar's Gallic War—A. J. Hare.....12 W.
Selection and Preparation of Food—Rachel H. Colwell..... 2 W.
Elementary Agriculture—A. W. Nolan.....11 W.
Advanced German—F. W. Truscott.....18 W.

11:00 A. M.

Fundamentals of English Grammar—S. C. Smith.....13 W.
Child Study—J. N. Deahl.....12 M.
Horticulture—A. W. Nolan.....11 W.
Plane Geometry—J. A. Eiesland.....16 W.
General Chemistry—A. R. Whitehill.....20 S.
Elementary Physics—C. W. Waggoner.....12 S.
Cicero's Orations, or Vergil's Æneid—A. J. Hare.....12 W.
United States History and Civics for Teachers—J. M. Callahan..30 W.

8:30–10:30

Observation Classes, Primary Grades—Clara M. Wheeler.....10 M.

9:30–11:30

Observation Classes, Grammar Grades—Sarah E. Griswold.....11 M.

1:00 P. M.

Chemistry—Qualitative Analysis—A. R. Whitehill.....22 S.
Chemistry—Quantitative Analysis—A. R. Whitehill.....22 S.
Chemistry—Analysis of Coal, Coke and Water—A. R. Whitehill..22 S.
Experimental Physics—C. W. Waggoner.....11 S.
Laboratory Equipment—C. W. Waggoner.....11 S.
Advanced Physical Laboratory—C. W. Waggoner.....10 S.
Botanical Laboratory—J. L. Sheldon.....N. F.

2:00 P. M.

Administration and Supervision of Schools—J. N. Deahl.....12 M.
History of Modern Education—L. L. Friend.....19 W.
Elementary Agriculture—A. W. Nolan.....11 W.
Conference for Primary Teachers—Clara M. Wheeler.....14 M.

3:00 P. M.

Lectures by R. G. Moulton, C. W. Kent, O. J. Kern, A. P. Bourland, J. R. Sampey and Franklin McElfresh.

4:00 P. M.

Organization, Inspection, and Supervision of Country Schools—J. N. Deahl and L. L. Friend.....12 M.
Nature Study Laboratory or Field Work—J. L. Sheldon.....

8:30 P. M.

Lectures by R. G. Moulton, C. W. Kent, O. J. Kern, M. P. Shawkey, J. D. Eggleston, Jr., J. R. Sampey, and Franklin McElfresh.

COURSES OF INSTRUCTION

All Courses Extend Throughout the Entire Six Weeks, Unless Otherwise Stated

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The abbreviations are: M., Martin Hall; W., Woodburn Hall; S., Science Hall; L., Library; C., Commencement Hall; E., Experiment Station; N. F., North Fife; M. H., Mechanical Hall.

The numbered courses are taken from the regular University Catalogue; the lettered courses are special Summer School courses.

All classes meet daily unless otherwise stated.

EDUCATION

SARAH E. GRISWOLD

G. Principles and Methods of Teaching. The topics studied will include attention, interest and association as related to the process of learning and teaching, the basis for the choice of subject matter, the significance and value of the various modes of expression, the influence of social factors in the formation of sentiments and habits of action. One-half credit. 8:00 a.m.; 14 M.

JASPER NEWTON DEAHL

A. Studying and Learning and Teaching. Required reading, recitations, discussions, observations of pupils studying and teachers teaching, reports and practice work. This course will aim to present some principles that will secure economic studying and learning and effective teaching. The observation classes will be used to get the data and facts to be developed in the course. One-half credit. 9:00 a.m.; 12 M.

B. Child Study. This course will deal with the physical, mental, and moral development of children. The aim will be to present the facts concerning childhood and adolescence with reference to children studying and learning in school. Some opportunity for concrete study of children will be given. One-half credit. 11:00 a.m.; 12 M.

7. Administration and Supervision of Schools. The first half of Education 7; see page 80. It is primarily for principals and superintendents of schools. Required readings, reports, and discussions.
One-half credit. 2:00 p.m.; 12 M.

C. Organization, Inspection, and Supervision of Country Schools. This course will make a study of the chief problems of rural schools, including such topics as organization, programs of studies, the teacher and the teaching, the learner and the learning, inspection and supervision, etc. The course is primarily for county and district superintendents of schools. One-half credit.
4:00 p.m.; Professor DEAHL and Professor FRIEND, 12 M.

LLOYD LOWNDES FRIEND

D. The History of Modern Education. The work of this course will center around four great educational Reformers,—Pestalozzi, Herbart, Froebel, and Horace Mann. The educational theories of each will be studied with special reference to the influence each has exerted upon the educational ideals of his time and the influence each has had upon the educational thought and practice of the present day. The course will consist of lectures, class discussions, prescribed readings and reports. One-half credit. 2:00 p.m.; 19 W.

E. High School Administration. This is a short course intended primarily for high school principals and teachers. Brief survey of the history of the American high school; consideration of the function of the high school, programs of studies, and the reorganization and management of high schools; study of some present day problem in high school administration. Class discussions and reports. One-half credit. 9:00 a.m.; 19 W.

F. Studying and Learning and Teaching. (Same as Education A.) One-half credit. 10:00 a.m.; 12 M.

CLARA M. WHEELER

Conference on Methods and Principles of Primary Teaching.
2:00 p.m.; 14 M.

Observation Classes

SARAH E. GRISWOLD and CLARA MABEL WHEELER

The observation classes will be conducted by Miss Sarah E. Griswold, Critic Teacher in the Chicago Normal School, and Miss Clara M. Wheeler, head primary teacher in Horace Mann School, Teachers College, Columbia University. They will consist of lessons given to pupils of first, third, fifth, sixth, and seventh grades, for the observation and criticism of teachers who desire to take this work. Special study will be made of the selection of subject matter, together with its organization, preparation and presentation; also of the principles illustrated by the specific lessons. Methods of teaching children how to study, and various mediums of expression, including dramatization, hand-work and seat-work, will be considered.

The recitation periods of the classes for observation will not exceed thirty minutes. Students taking the observation work can, therefore, adapt it to their courses in other subjects so as to have no conflicts.

Two periods a day should be the maximum time spent in observation work. Every student in the Summer School should do some regular, systematic class work, academic or professional, or both. Those who observe but do no class work should, at least, devote a part of their time to systematic reading in the library on the subjects of their observation work. Students desiring certificates for observation work will be required to do some reading and reporting on the lessons observed.

Grammar Grades

SARAH E. GRISWOLD

Classes of the Fifth, Sixth and Seventh Year Pupils. The work of these classes will include the subjects taught in the public schools. Special effort will be made to give realness to the topics studied and to awaken and utilize the pupils' power of initiative.

9:30–11:30 a.m.; 11 M.

Primary Grades

CLARA M. WHEELER

Classes of First and Third Year Pupils. The work of these classes will include the subjects studied by first and third year pupils in the public schools. The method and principles illustrated will be of

almost equal value to teachers of second year pupils or of fourth year pupils. 8:30–10:30 a.m.; 10 M.

NOTE:—Both Miss Griswold and Miss Wheeler will be glad to meet teachers in private conferences as well as at the fixed times for conferences and classes.

COUNTRY SCHOOL SUPERVISION

During the week of June 26 to July 1, the special feature (outside of the regular courses of instruction, which go on without interruption for the entire six weeks) will be a study of the problems of Rural School Supervision. That week will be known as "Supervision Week." During that week various problems in the administration and supervision of country schools will be fully discussed. There will be adresses, illustrated lectures, informal conferences, and other forms of discussion. Some of the foremost authorities on this subject in the whole country will participate. It will doubtless be the most important rural school conference yet held in this country.

One of the leaders in the conference will be County Superintendent O. J. Kern of Winnebago County, Illinois. Mr. Kern will give some illustrated lectures on the subject of the improvement of the country school. State Superintendent Shawkey will lead some of the conference sessions and will give an evening address on "The State's Educational Activities in Review."

PUBLIC SCHOOL DRAWING

LILLIAN FLIEGE

Course A. For teachers in primary and intermediate grades. 10:00 a.m.; 14 W.

Course B. For teachers in grammar grades. 4:00 p.m.; 14 W.

Course C. Handicraft; design and its application in leather tooling, stencilling, and block printing. 11:00 a.m.; 14 W.

CLAY MODELING

LILLIAN FLIEGE

A course of practical instruction in Clay Modeling for public school teachers will be given at an hour to meet the convenience of the greatest number of applicants. 14 W.

ENGLISH LITERATURE

RICHARD G. MOULTON

During the week beginning June 19, Professor Richard G. Moulton of the University of Chicago will give a course of lectures on—

The Philosophy of Shakespeare. The special topics will be as follows:

1. Richard the Third: The World as a System of Retribution.
2. The Merchant of Venice: The Play of Character and Accident.
3. King Lear: A Moral Problem Dramatized.
4. Lady Macbeth: The Outer and the Inner Life.
5. King John: The Pendulum of History.
6. The Philosophy of Shakespeare.

For illustrative reading: "Shakespeare as a Dramatic Thinker" by R. G. Moulton. (The Macmillan Company, $1.50.)

The first lecture will be Tuesday, June 20th. Two of the lectures will be given at night. June 20-23, 3:00 p.m.; C.
June 20 and 22, 8:30 p.m.; C.

CHARLES W. KENT

During the week beginning July 10, Professor Charles W. Kent of the University of Virginia will give a course of afternoon lectures and a course of evening lectures. The afternoon lectures will be:

1. Shakespeare as a Dramatic Artist.
2. Milton's Great Epic.
3. The Age of Johnson.
4. A Trio of Romanticists.
5. Tennyson as the Representative Poet of the 19th Century.

July 10–July 14, 3:00 p.m.; C.

His evening Course will be on *Southern Poets*, as follows:

1. Poetry Prior to Poe.
2. Edgar Allen Poe.
3. From the death of Poe to Lanier.
4. Sidney Lanier.
5. Our More Recent Poets.

July 10–July 14, 8:30 u.m.; C.

JOHN HARRINGTON COX

58. Literature in the Grades. A course primarily for teachers, but open to other students in the Summer School. It deals with the

principles of literary criticism; application of tests; the science and art of story-telling; general and special methods of presentation; the tributaries of the literary stream; course of study; bibliography.
One-half credit, 8:00 a.m.; 32 W.

39. Shakespeare. The aim of this course is to develop the power to read Shakespeare with intelligent appreciation. A small number of plays will be studied carefully with special attention to exact interpretation and to those peculiarities of language in which Shakespearean usage differs from our own.
One-half Credit, 9:00 a.m.; 32 W.

A. Nature Study in the Poets. The study will deal especially with Wordsworth, Bryant, and Lowell; reading of poems; interpretations; lectures. One-half credit, 10:00 a.m.; 32 W.

SIMEON CONANT SMITH

C. The Fundamentals of English Grammar. An outline study of English grammar with special reference to the structure of the sentence. No credit. 11:00 a.m.; 13 W.

B. High School Literature. A study of several of the English classics usually included in the secondary school course. Attention is given to methods of teaching literature in the high school. The work consists partly of lectures and partly of recitations on the text or on assigned topics. One-half credit. 9:00 a.m.; 13 W.

10. Composition (College). Study of brief text-book; daily themes prepared and presented; class composition; daily criticism and discussion of written exercises.
One-half credit, 10:00 a.m.; 13 W.

BOTANY AND NATURE STUDY

JOHN LEWIS SHELDON

A. Botany. This course includes the recognition, collection, and study of some of the common plants growing in West Virginia, such as pondscums, bacteria, yeasts, molds, mildews, rusts, smuts, mushrooms, liverworts, mosses, ferns, and seed plants. Special emphasis will be given to those of every-day importance in the home, and in their relation to agriculture, gardening, and fruit growing. One credit.
Class work, 8:00 a.m., field or laboratory work, 1:00–3:00 p.m.
N. F.

B. Nature Study. A practical course for anybody who wishes to become better acquainted with some of the beneficial as well as harmful organisms known as "germs" or "microbes," and of special value to teachers of physiology and hygiene in the public schools and students in domestic science. Lectures with demonstrations, recitations and laboratory work. One-half credit. 9:00 a.m. N. F.

C. Nature Study. This course has been arranged for those who expect to teach nature study and elementary agriculture in the public schools. A portion of the time will be used for informal talks on methods of presenting the subject, but more emphasis will be given to a study of objects at first hand, either in the laboratory, or field, than to a study about objects. One-half credit. Class work, 10:00 a.m. daily. Laboratory or field work, 4:00 p.m. The class will be divided into sections for field work. Drawing Room, M. H.

AGRICULTURE

ARETAS WILBUR NOLAN

A. Elementary Agriculture. An elementary study of the main topics of general agriculture. Seed improvement; soil culture; checking the waste; live stock improvement; rural organizations. Emphasis to be placed upon the subject matter of agriculture, with such references to the methods of teaching the subject as will help the teacher in the public schools in the use of text-books and illustrative materials. Lectures, recitations and field work. One-half credit.

Section 1. 9:00 a.m.; Field work Tuesday and Thursday, 2:00 p.m. 11 W.

Section 2. 10:00 a.m.; Field work Monday and Wednesday, 2:00 p.m. 11 W.

B. Horticulture. A practical study of home vegetable and fruit gardening. The handling of the land and the plants of the garden. The growing of vegetables and fruits. Consideration of school gardening. Students should have had at least one course in elementary agriculture to enter this course. One-half credit. Lectures, recitations, and field work.

11:00 a.m., Field work Friday, 4:00 p.m.; 11 W.

C. Agronomy. A study of farm crops and the relation to the soil. Farm seeds; corn judging; soil physics; soil fertility; rotation of crops; fertilizers, and farm machinery.

Monday, Wednesday and Friday, 8:00. Lectures and recitations. Tuesday and Thursday, 2:00 p.m. Fled work. One-half credit. 3 M.

D. Animal Husbandry. Studies of farm animals and their products. Elementary lessons in judging and feeding live stock. Principles of live stock improvement. Elements of dairy husbandry. Live stock and farm management. Lectures, recitations and field work.

Monday, Tuesday and Friday, 10:00. Wednesday and Thursday, 2:00 p.m. Field work. One-half credit. 3 M.

ENTOMOLOGY

E. D. Sanderson

A. General and Economic Entomology. Lectures and recitations. Insect life as related to agriculture. The anatomy, life histories and habits of insects. The characteristics of the orders, and more important families. Insects of economic importance and their control. Laboratory and field studies. Collections and demonstrations. One-half credit. W.

DOMESTIC SCIENCE

Rachel Hartshorn Colwell

A. Preservation of Food. The composition, physiological and economic value of fruits and vegetables will be considered. special attention being given to the relation of cost to actual food value. This course is planned to meet the needs of those who wish a practical grasp of the subject and the laboratory work will be emphasized. One-half credit. Recitations and laboratory 8:00–10:00 a.m.; 2 W.

1. Selection and Preparation of Food. A study of the chemical composition, relative physiological and economic value of the animal foods and their products; processes in production of raw food material, practical application is given of the methods by which heat is applied to the food material. One-half credit.

Lectures and laboratory work 10:00–12 a.m. (except 11 a.m. Wednesday). 2 W.

It will be possible to arrange laboratory work in the afternoon if the majority of the students have other work at 11 a.m.

CHEMISTRY

ALEXANDER REID WHITEHILL

A. General Chemistry. This course is designed for beginners and serves as a general introduction to chemical study. It is general rather than technical in its nature. It includes the study of some of the more important elements and special attention is directed to the application of chemistry to agriculture, botany, geology and other scientific branches of study, and to every day life. The course is especially adapted to the needs of science and nature study teachers. Instruction is given by lectures and these are fully illustrated by experiments. One-half credit, 11:00 a.m.; 20 S

B. Synthetic Inorganic Chemistry. A laboratory course for teachers of chemistry and others wishing to supplement previous work in general chemistry. Courses 1 and 2 of the University Catalogue or their equivalent are prerequisite. Hours to be arranged.

4 and 5. Qualitative Analysis. A laboratory course treating of the separation and detection of the more common elements.
1:00 p.m.; 22 S.

6. Elementary Quantitative Analysis. This course includes a small number of simple gravimetric, volumetric and electrolytic determinations, together with the study of the operations involved.
1:00 p.m.; 22 S.

7. Analysis of Coal, Coke and Water. This is a course designed especially for engineering students, but open to others who have the necessary preliminary training. 1:00 p.m.; 22 S.

9. Quantitative Analysis. Students registering for this course will be assigned such work as they are prepared to do.
Hours to be arranged; 22 S.

NOTE:—The work in chemistry will be adjusted, as far as possible, to meet the individual needs of the students, and credit will be given in proportion to the amount of work done.

PHYSICS

CHAUNCEY WILLIAM WAGGONER

A. Elementary Physics. This course is intended for teachers

of physics in secondary schools. It consists of lectures and demonstrations. Elementary theory of heat, magnetism, static and current electricity are the subjects to be covered 1911. Millikan and Gale's Text Book of Physics will be followed in these lectures. Students seeking college credits for this course, and who have offered one unit of physics for entrance, will be required to solve a list of advanced problems. One-half credit. 11:00 a.m.; 12 S.

4. Experimental Physics. This course consists of a graded series of experiments taken from Millikan and Gale's Manual of Physics. For those who wish college credit, Blaker's Manual is used. The student is expected to complete twenty-two Experiments for the term's work. One-half credit.
1:30 p.m., Monday, Tuesday, Wednesday and Thursday; 11 S.

4 A. Laboratory Equipment. A limited number of teachers of physics will be taken for a practical course in laboratory equipment; including cost and repair of apparatus, the design and construction of simple yet inexpensive pieces of apparatus will be undertaken. The department has a well equipped shop for wood and metal working. Teachers desiring to enter this work should notify the department in advance of the Summer Session. One afternoon per week. Friday, 1:30. No credit will be given for this course.

16. Advanced Physical Laboratory. A course in precise measurements in physics open to students who have had the necessary prerequisites in physics and mathematics. 1:00 to 3:00 p.m.; 12 S.

Students desiring other work than that outlined in the foregoing courses will be accommodated if the time of the instructor will permit.

MATHEMATICS

JOHN ARNDT EIESLAND

3. Algebra. Review up to quadratic equations. Quadratic equations and graphic algebra. One-half credit. 9:00 a.m.; 16 W.

5. Plane Geometry. Review course. Exercises in Algebraic geometry. One-half credit. 11 a.m.; 16 W.

9. Plane Trigonometry. Development of formulae. Solution of trigonometrical equations; antitrigonometric functions; practical exercises and problems. One-half credit. 10:00 a.m.; 16 W.

1. Astronomy. Elementary Descriptive Astronouy. One-half credit. Hours to be arranged; 16 W.
Hours to be arranged; 16 W.

NOTE:—Courses other than those announced above will be given if the time of the instructor permits. An effort will be made to give whatever is called for.

GERMAN

FREDERICK WILSON TRUSCOTT

1. Elementary German. For beginners. The elements of the grammar and the reading of easy prose. Constant practice in pronunciation. One-half credit. 8:00 a.m.; 18 W.

A. Intermediate Reading and Composition. For those who have had one year of German. Rapid reading of narrative and descriptive prose by modern authors. Translation of English into German. Review of the grammar. One-half credit. 9:00 a.m.; 18 W.

B. Advanced Reading and Composition. For those who have had two years of German. The reading will be, partly, in the German classics and, partly, in a German magazine. Practice in writing German. Special study of the verb. One-half credit.
10:00 a.m.; 18 W.

LATIN

ALFRED JARRETT HARE

A. Elementary Latin. This course is for beginners and for others who wish to review the subject. The work will include pronunciation, declensions, and conjugations, and the translation of simple sentences to illustrate the uses of the various forms.

A more advanced course in syntax will be given if necessary to suit the demands of the class. One-half credit. 8:00 a.m.

10. Cicero's de Senectute. Oral and written translations and grammatical constructions. Historic allusions. Synonyms. One-half credit. 9:00 a.m.

7 or 8. Cicero's Orations or Virgil's Aeneid. An attempt will be made to accommodate those who wish to work for credit in either of these courses. One-half credit. 11:00 a.m.

4. Caesar's Gallic War. This course is for students who desire entrance credit, or for teachers of elementary Latin who wish to review. The work will include careful translation, grammatical construction, indirect discourse, and the historic references in the text. One-half credit. 10:00 a.m.

LIBRARY SCIENCE

L. D. ARNETT

The introductory courses offered are designed to afford practice in modern library methods and are intended for persons who have charge of school or town libraries.

A. Library Records. This course affords instruction and practice in cataloguing; accessioning, shelf-listing, and the circulation of books. No credit. 10:00 a.m.; L.

B. Library Economy. Study and practice in the classification of books; selection and purchase of books, including those suitable for the school library; reference work; and the binding and repair of books. No credit. 9:00 a.m.; L.

HISTORY

JAMES MORTON CALLAHAN

Three regular credit courses are offered and a period is arranged for daily informal conferences.

15. Development of the Latest Age. An account of the significant movements and ideas which constitute the framework of the history of Europe (including England) and the Far East in the last half century, emphasizing the social and economic elements of history, and subordinating the importance of the past to that of the present without any distortion of facts. One-half credit.
8:00 a.m.; 30 M.

26. The United States as a World Power; Its Development and Its Problems. A study of the relations of the United States to the great drama of world politics, the fundamental principles of American foreign policy, and America's influence in international law and diplomacy. The entire study is developed from the standpoint of

live problems of the present. For mature students who are familiar with the outlines of American history. One-half credit.
10:00 a.m.; 30 W.

A. United States History and Civics for Teachers. A practical survey course in the prominent characteristic movements and fundamental facts of American development. This course is particularly suited to the needs of students who desire a single course, reviewing the chief periods and phases of American history and is also designed to give a clearer knowledge of the meaning and scope of history and civics and some training in the use and interpretation of historical materials. One-half credit. 11:00 a.m.; 30 W.

Special Historical Conference. Students in the regular history classes, and teachers attending other classes in the Summer School, are given an opportunity for a daily conference for the consideration of special topics in connection with regular class work, consultation in regard to investigations in state and local history, the discussion of the proper materials, tools and methods of historical study and instruction, and the inspection of text-books, maps and various pedagogical aids and devices necessary or useful for properly equipped teachers of history and civics in the secondary schools. No credit. 30 W.

MUSIC

Voice and Sight Reading

LOUIS BLACK

Mr. Black is Director of the School of Music in the University. Individual instruction is offered in voice, either three lessons, two or one a week during the six weeks as the pupil may desire. A class is organized in sight reading. The "movable do" method is employed. This method is practical and has been successful in practical work for many years, particularly in public schools. The work will embrace some fundamental drill in harmony.

Piano

ETHEL BORDEN BLACK AND GRACE MARTIN SNEE

Mrs. Black is a graduate of the New England Conservatory of Music and was for several years a teacher in that institution. She

has been a pupil of J. Wallace Goodrich, Dr. Albert Jeffry and Carl Baerman.

The intermediate and children's classes in piano are in charge of Miss Moore, a member of the School of Music faculty.

Violin; Ensemble Classes

MARGARET HORNE

Miss Horne is Instructor on the Violin in the School of Music.

Pipe Organ

GRACE MARTIN SNEE

Member of the School of Music faculty.

Theory of Music

FLORA RAY HAYES

Harmony I.
Harmony II.
Harmony III.
Elementary Harmony. Special course for teachers.
History of Music. Special course for teachers.

HISTORICAL LECTURE RECITALS

Six recitals will be given during the progress of the Summer School at which the Director of the School of Music will give lectures illustrated by programs; a great composer, school or epoch being considered at each recital.

RATES OF TUITION

Voice

MR. BLACK

Six weeks, three lessons a week.....$25.00
Six weeks, two lessons a week.....$18.00
Six weeks, one lesson a week.....$10.00

Piano

MRS. BLACK

Six weeks, three lessons a week.....$25.00
Six weeks, two lessons a week.....$18.00
Six weeks, one lesson a week.....$10.00

MRS. SNEE

Intermediate, six weeks, three lessons a week.....$18.00
Children's class, six weeks, three lessons a week.....$10.00

Violin

MISS HORNE

Six weeks, three lessons a week.....$18.00
Six weeks, two lessons a week.....$12.00
Six weeks, one lesson a week.....$ 8.00

Pipe Organ

MRS. SNEE

Six weeks, three lessons a week.....$25.00
Six weeks, two lessons a week.....$18.00
Six weeks, one lesson a week.....$10.00

Ensemble and Accompanying

MISS HORNE

Six weeks, three lessons a week.....$18.00
Six weeks, two lessons a week.....$12.00
Six weeks, one lesson a week.....$ 8.00

Sight Reading

MR. BLACK

Six weeks, three lessons a week.....$ 4.50

Theory

FLORA RAY HAYES

Harmony

Six weeks, three lessons a week.....$10.00

History of Music

Six weeks, three lessons a week.....$10.00

Pianos for Practice

One hour per day for six weeks, $2.50.
Two hours per day for six weeks, $4.00.
Three hours per day for six weeks, $5.00.
Clavier practice for six weeks, one hour per day, $1.00.
Organ practice, twice the cost of piano practice.

All tuition and other fees are payable in advance. Sheet music provided for the cost of handling. Students can enter at any time; a slight reduction will be made for the time not taken in the full course.

SCHOOL OF METHODS FOR SUNDAY SCHOOL WORKERS

The seventh session of the School of Methods for Sunday School Workers will be held at West Virginia University from July 17 to July 21, 1911. As usual, it will be held in connection with the University Summer School, but neither interferes with the other; indeed, each is of great benefit to the other.

No tuition fee is charged. A registration fee of one dollar is charged, but students registered in the regular Summer School are not required to pay even this nominal fee.

The purpose of the School of Methods is to give pastors, Sunday School Superintendents and teachers an opportunity to be instructed in the most modern principles and methods of Sunday School work by some of the leading Sunday School Workers of America.

International Recognition

The International Department of Education will grant certificates to students according to the following standard:

A. Attendance of the student for at least 15 hours of the work.

B. Recommendation by the management of the school, based upon approval of note-books, or such other examination as they may require.

Attendance at the study hour will have weight with the management of the school in recommending students for recognition.

The detailed program is published in a separate pamphlet which may be had for the asking. The week will be filled with instruction of great practical value to all Sunday School superintendents, teachers, and others engaged in Sunday School work. For program of School of Methods for Sunday School Workers write to President Purinton, Morgantown, W. Va., or Arthur T. Arnold, General Secretary West Virginia Sunday School Association, Wheeling, W. Va.

THE PREPARATORY SCHOOL

INSTRUCTORS

In addition to those members of the University Faculty who give some instruction in courses not of college grades the following instructors are engaged in preparatory or sub-freshman teaching:

WILLIAM HENRY GALLUP, A.M. — 324 Willey Street
Instructor in Mathematics and History

JOHN DUNHAM GARRISON — 247 Fife Avenue
Instructor in English and History

ATKESON, MARY MEEK, A.B. — 234 Prospect Street
Instructor in English and History

GENERAL ANNOUNCEMENT

After September 1, 1911, candidates for admission to the Preparatory School at Morgantown must be at least fifteen years of age and must have credit at entrance for at least nine units of the fifteen units required for admission to the College of Arts and Sciences. If not residents of West Virginia they must pay a tuition fee of $10.00 per quarter or $25.00 per year. Matriculation, contingent, and athletic fees are also to be paid on the same conditions as those prescribed for students in the University.

After September 1, 1912, by order of the State Board of Regents, the Preparatory School at Morgantown will be discontinued.

COURSES OF INSTRUCTION

Until further notice the following courses, not of college grade, will be offered for the benefit of students enrolled in the Preparatory School at Morgantown or for students enrolled as conditioned freshmen or as special students in any college in the University.

ENGLISH

5. Elementary Rhetoric and Composition.
Fall, Spring, 8:30; Mr. GALLUP or Miss ATKESON, 2 M.

6. Composition and Rhetoric. In this, and the following course, careful drill in composition is continued, embracing a study of the sentence, the paragraph, the theme, diction, the figures of speech, and the important forms of prose and poetry. In each of these courses one of the English or American classics is studied closely in class, and book reviews and outlines are prepared of other required readings. Some attention is paid to the review of grammatical principles and to the history of the English language.
Winter, 8:30; Mr. GALLUP or Miss ATKESON, 2 M.

7. Composition and Rhetoric. Continuation of course 6.
Fall, 11:30; Professor JOHNSON, 10 M.

NOTE:—Course 7 will also be offered in the Spring quarter when there is sufficient demand.

8. English Literature. A study of some of the English classics prescribed in the college entrance requirements. As far as practicable, this work in literature is made to illustrate and enforce the knowledge already gained from the study of rhetoric. Critiques and reviews. Winter, 11:30; Professor JOHNSON, 10 M.

9. English Literature. Continuation of course 8.
Spring, 11:30; Professor JOHNSON, 10 M.

HISTORY AND CIVICS

3. Mediaeval and Modern History. A general survey of the history of western Continental Europe from the break-up of the Roman empire to the present time. Spring, 11:30; 2 M.

4. History of England. An outline of English history from the earliest times to the present. The founding, unfolding, and expansion of the English nationality, and the growth of English institutions.
Fall, 10:30; Mr. GALLUP, 2 M.

5. United States History. A general course of narrative and political history required for admission to all college courses in United States history. Winter, 10:30; Mr. GALLUP, 2 M.

6. Civics. West Virginia and the Nation. This course presents an outline of (1) the government of West Virginia; (2) the structure of the Federal government and the methods of governing under it; and (3) the rights and duties of American citizens. Prerequisite, course 5. Spring, 10:30; Mr. Gallup, 2 M.

LATIN

4. Caesar's Gallic War (Books I and II).
Fall, 10:30; Professor Hare, 12 W.

5. Caesar's Gallic War (Books III and IV).
Winter, 10:30; Professor Hare, 12 W.

MATHEMATICS

4. Algebra. Review Course. Simple equations, discussions of problems, zero and infinity, inequalities, involution, theory of exponents, radicals, quadratic equations. Wentworth's College Algebra.
Fall, 8:30; Winter, 11:30; Mr. Foulk or Miss Buchanan.

5. Plane Geometry. Rectilinear Figures, and the Circle. Wentworth's Plane Geometry, Books I and II.
Fall, 9:30; Winter, 8:30; Mr. Foulk or Miss Buchanan.

6. Plane Geometry. Wentworth's Plane Geometry, Books III and IV. Winter, 9:30; Spring 8:30; Mr. Foulk or Miss Buchanan.

ACCOUNTING

Mr. Willis and Mr. King

Note:—The following courses in accounting may be offered for entrance credit in the University only by students who register for one of the courses in commerce. See University Catalogue for 1910-11, page 62.

1. Elementary Business Practice. The elements of single and double entry accounts; the use of books of original entry; the use of ledgers and books of permanent record; the use of trial balances; and abstracts of single entry accounts; the methods of detecting and correcting errors in books of original entry ledgers, etc., the use and method of ruling, etc., the methods of closing single and double entry ledgers. Fall, Winter, Spring; 11:30; 12 M.

2. Accounting Practice. This is an introductory course consisting of business practice and extensive drills in the use of vouchers, files, and in journalizing, posting, etc. Elementary rules and fundamental principles of book-keeping. The student is familiarized with the duties of a bill clerk, shipping clerk, warehouseman, secretary and book-keeper for a firm doing a merchandising business. Prerequisite, Accounting 1. Fall, Winter, Spring, 11:30; 12 M.

3. Accounting and Office Work. Continuation of course 2. Making inventories of the property and resources and liabilities, financial statements, balances and balance sheets, etc.; writing of articles of agreement, deeds, mortgages, bills of sale, etc.; adjustment of losses and the settlements with insurance companies after a fire; changing the firm and the kind of business, etc., and changing from double to single entry book-keeping. Prerequisites, Accounting 1 and 2. Fall, Winter, Spring, 11:30; 12 M.

STENOGRAPHY

Mr. KING

NOTE:—The following courses in stenography and typewriting cannot be counted as entrance credits for admission to the Univrseity.

1. Fundamental Principles—Amanuensis Style. In this course theory and practice are combined in such a way as to enable the student to apply without hesitation the principles he has learned in the writing of isolated words, phrases, sentences and letters. Accuracy, rather than speed, is required. Pitman-Howard's Phonographic Amanuensis. Prerequisite, English 6. Fall, 2:00 P.M.; 18 M.

2. Contracting Principles—Amanuensis Style. In this course accuracy is still emphasized but speed is given some consideration. At the close of this course the student should be prepared for general dictation and speed exercises. Pitman-Howard's Phonographic Amanuensis and Progressive Dictation Exercises. Winter, 2:00; 18 M.

3. General Dictation and Speed Practice—Amanuensis Style. General dictation of business, railroad, and technical letters, railroad orders and notices, specifications, and legal forms and documents, with sight reading of classics in shorthand, and a study of selected useful contractions. Pitman-Howard's No. 1—Miscellaneous Correspondence; No. 2—Railroad Correspondence; No. 3—Classified Correspondence; and Dictionary and Phrase-book. Spring, 2:00; 18 M.

4. General Dictation and Speed Practice—Amenuensis Style. Continuation of course 3. Pitman-Howard's No. 4—Insurance Correspondence; No. 5—Classified Corespondence; Legal Forms; and Dictionary and Phrase-book. Hours to be arranged; 18 M.

5. Reporting Style. This course is designed for those who have completed courses 1 and 2 and who desire to prepare themselves for taking testimony and depositions, or for reporting speeches and other discourses. It prepares the student for the actual work found in course 6. Pitman-Howard's Reporter's Companion; testimony of Louis J. Weichmann given on examination in chief in the trial of John H. Surratt, indicted for the murder of Abraham Lincoln; and Burke's Conciliation with the Colonies. Hours to be arranged; 18 M.

6. Court Reporting—Reporting Style. This is a special course in court reporting for students who have completed courses 1, 2, and 5. This work is given in connection with the classes in court practice in the College of Law. The student is appointed court stenographer by the judges of the court and reports the cases tried in that court and in the justices' court of the same department. Duplicate reports are submitted for inspection. This gives the student actual practice in court reporting, as required by the West Virginia law. In addition to this actual practice daily drills are given to acquire speed in writing and transcribing testimony. Pitman-Howard's Reporter's Companion, and Dictionary and Phrase-book.
Winter, 2:00 to 4:00; 18 M.

TYPEWRITING

Mr. KING

NOTE:—Both single and double, universal keyboards, with blank key-tops are employed for instruction and practice in touch typewriting, the modern method of instruction. The quality of the work performed by the student is inspected by the instructor at regular intervals.

1. Mechanism of the Machine and Mastery of the Keyboard. The instruction includes a study of the mechanism and method of operating the machine, with due regard to its cleanliness; position at machine; fingering and touch; thorough drills on the various exercises outlined in the text. The exercises are graduated in such a way that perfect work is required from the beginning. Ross's Progressive Lessons in Touch Typewriting. One-third course.
Fall, Winter, Spring, 8:30 to 12:30; 19 M.

2. Mastery of the Keyboard. Continuation of course 1. Ross's Progressive Lessons in Touch Typewriting. One-third course.
Fall, Winter, Spring, 8:30-12:30; 19 M.

3. Practice. The transcription of exercises, letters, and other suitable matter, either from shorthand notes or English text. The student is taught to rely upon himself and to work for the highest possible speed consistent with perfect work. One-third course.
Fall, 8:30; Winter, 10:30; Spring, 11:30; 19 M.

4. Forms and Practice. Transcription of various forms of letters, legal forms and documents, specifications, court proceedings, etc.; folding and backing of manuscripts. One-third course.
Fall, 10:30; Winter, 8:30; Spring, 10:30; 19 M.

5. Manipulation of Manifolding Devices, Etc. The student is instructed in the use of carbon paper, the hectograph, the rotary mimeograph, the multigraph, and other duplicators, and is given actual work to perform on these devices. He is also instructed in the most modern methods of filing correspondence, and the proper use of other office accessories and equipment. One-third course.
Fall, 11:30; Winter, 11:30; Spring, 8:30; 19 M.

THE WEST VIRGINIA AGRICULTURAL EXPERIMENT STATION

STAFF

JAMES H. STEWART, A.M. *Director and Agriculturist*	118 Willey Street
BERT HOLMES HITE, M.S. *Vice Director and Chemist*	Peabody Hotel
WILLIAM EARL RUMSEY, B.S.Agr. *Entomologist*	415 Park Street
NAHUM JAMES GIDDINGS, M.S. *Bacteriologist*	216 Cobun Avenue
HORACE ATWOOD, M.S.Agr. *Assistant Agriculturist*	Experiment Station Farm
FREDERICK ERNEST BROOKS *Associate Entomologist*	98 Gaston Avenue
FRANK BATSON KUNST, A.B. *Assistant Chemist*	Garlow Building, High Street
CHARLES EDWARD WEAKLEY, Jr. *Assistant Chemist*	415 Park Street
ARTHUR LINCOLN DACY, B.Sc. *Assistant Horticulturist*	Bunchanan Avenue
JAN HENDRICK BERGHUIS-KRAK *Assistant Chemist*	6 Jones Avenue
OSCAR CHARLES BECK, B.S. *Assistant Chemist*	68 Beverly Avenue

WILLIAM FIROR, B.S.AGR.
Assistant Holticulturist.

WILLIAM J. WHITE — Marion Street
Clerk

MARTHA A. STEWART — 118 Willey Street
Librarian

ALICE ENGLE — 247 Willey Street
Secretary

The Experiment Station is a distinct and separate department of the University, and was established by the Board of Regents in 1887, by authority of an act of Congress, known as the Hatch Act, which was passed on the 2nd day of March of that year. The funds for carrying on the operation of the station, with the exception of its earnings, are derived wholly from the general government. The aforesaid act in section 2 fully states the object and purposes of the Experiment Station as follows:

"That it shall be the object and duty of said experiment station to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches and experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories."

Bulletins and annual reports setting forth results of experiments and investigations conducted at the station are published for gratuitous distribution, and will be mailed to any citizen of the state applying for them. The station invites correspondence, suggestions, and advice from farmers and others interested in this work, and all such, with reference to bulletins, experiments, or any matter relating to agriculture, will be welcomed and will receive careful and prompt attention. Correspondence should be addressed to the director of the station.

DIPLOMAS AND CERTIFICATES

COMMENCEMENT, JUNE 15, 1910

Teacher's Certificate in Music

Iva Eleanora Ginkel	Littleton
Emma Mae Harris	Glen Easton

Diploma in Two-Year Commercial Course

Rebecca Core	Cassville

Certificate in Stenographic Course.

Elsie Mae Norman	Spencer

LIST OF STUDENTS

REGULAR STUDENTS IN THE UNIVERSITY SCHOOLS

In the case of students in the Preparatory School the year or class in which they were enrolled on the first day of January, 1911, is indicated in the third column.

Adams, Charles Sisson	Morgantown	4th Year Prep.
Adams, Clara Wiles	Aurora	Summer School
Adkison, Minnie	Mt. Clare	Summer School
Albright, Erbie Clare	Morgantown	Summer School
Ankrom, Zadok William	New Martinsville	4th Year Prep.
Arbogast, Jessie	Hacker Valley	Summer School
Arnold, Eugene Hill	Elkins	Summer School
Auvil, Della	St. Marys	Summer School
Auvil, Harvey Wayne	Parsons	Summer School
Ayer, Perie Blanche	Grafton	Summer School
Bailey, Garland Howard	Giatto	3rd Year Prep.
Bailey, Permelia	Mason	Summer School
Baird, Hallie Adella	Elm Grove	Summer School
Baker, Grace Juliette	Morgantown	4th Year Prep.
Baldwin, Mary Elizabeth	Moundsville	Summer School
Barbe, Victor E.	Morgantown	2nd Year Prep.
Bartlett, Juanita May	Grafton	Music
Bartlett, Myrtle Osa	Grafton	Summer School
Batten, Ruth	Morgantown	Music
Baumann, Alma Barbara	Wheeling	4th Year Prep.
Beaumont, Catherine Elizabeth	Morgantown	4th Year Prep.
Beaumont, John Herbert	Morgantown	3rd Year Prep.
Beck, Emma Carolyn	Morgantown	Art
Beckett, Ernest Clyde	Morgantown	Music
Bell, Earl Edward	Clarksburg	3rd Year Prep.
Bennett, Anna	Wellsburg	Summer School
Berry, Dorothy Belt	Martinsburg	3rd Year Prep.
Bickerstaff, Iva Blanche	Wellsburg	Summer School
Biern, Oscar Bernard	Huntington	4th Year Prep.
Bjornson, Edwin	Morgantown	3rd Year Prep.

Black, Louis	Franklin, Pa.	Summer School
Blair, Charlotte Amy	Waynesburg, Pa.	Music
Blenko, Grace	Pt. Marion, Pa.	Music
Boggess, John Paul	Clarksburg	4th Year Prep.
Bonar, John Stanley	Benwood	Summer School
Bonar, May	Glen Easton	Summer School
Bour, John William	Morgantown	2nd Year Prep.
Bowers, Ashby C.	Franklin	Cer. in Agri.
Bowlby, Emmons	Bowlby	Dip. Agr.
Boyles, Melville Peter	Philippi	4th Year Prep.
Brake, Claude Andrew	Buckhannon	Summer School
Brand, Linnie	Morgantown	2nd Year Prep.
Brinkley, Rose	Salem	Summer School
Broadwater, Charles Lester	Harrisville	Summer School
Brooke, Marshall Dodd	Uniontown, Pa.	2nd Year Prep.
Brookfield, Inez Parker	Smithfield	Summer School
Brown, Clara Gertrude	Huntington	Summer School
Brown, Ella Selina	Cameron	Summer School
Brown, Myrtle	McMechen	Summer School
Brown, Stella Elliott	Bridgeport	Summer School
Burdett, Fred Herbert	Morgantown	3rd Year Prep.
Burgess, Basil Spurlock	Wayne	3rd Year Prep.
Burk, Anna May	Dunkard, Pa.	Music
Burkhardt, Edwin Marten	Morgantown	2nd Year Prep.
Burkholder, Elizabeth	Connellsville, Pa.	Summer School
Burns, Elizabeth Myles	Logan	Summer School
Buttermore, Gladys Pauline	Connellsville, Pa.	Summer School
Cady, Agnes	Morgantown	Music
Campbell, Jacob Ernest	Berea	4th Year Prep.
Carney, Alfreda	Charleston	Summer School
Carr, Blanche	New Hope	Summer School
Carrico, Jessie Edith	Rowlesburg	Summer School
Chambers, Vannetta	Martinsburg	Summer School
Chalmers, Mary Adam	Morgantown	Commercial
Chancey, Neville Lakin	Reedy	Summer School
Chapman, Grace	Spencer	Summer School
Chapman, Laura Elizabeth	Spencer	Summer School
Clark, Maude Arrie	Uffington	Music
Clawson, Nevada Arietta	Sistersville	Summer School
Cobaugh, Bruce Urban Parker	Connellsville, Pa.	Summer School
Coberly, James Gillespie Blaine	Elizabeth	Summer School
Coffman, Harry Franklin	Morgantown	3rd Year Prep.
Cokeley, Lila May	Harrisville	Summer School

Cokeley, Roscoe Benjamin	Harrisville	Summer School
Cole, James Henderson	Morgantown	4th Year Prep.
Colerider, Ray	French Creek	Summer School
Combs, Charles Crawford	Mill Wood	Cer. in Agr.
Conaway, Gertrude May	Barrackville	Summer School
Connell, Margaret Elizabeth	Fort Spring	Summer School
Conner, Joseph Alger	Pleasant Valley	3rd Year Prep.
Coombs, Edith Ellwood	Morgantown	Music
Coombs, Forrest Pembrock	Morgantown	4th Year Prep.
Cooney, Marulla Dorothea	Aloy	Summer School
Cordero, John Philander	Grindstone, Pa.	4th Year Prep.
Courtney, John David	Morgantown	Music
Crane, Harley Lucius	Terra Alta	4th Year Prep.
Crawford, Elsie Ashby	Morgantown	Music
Creel, Thomas Hardin	Kanawha Station	2nd Year Prep.
Cronin, Harry Raymond	Richwood	3rd Year Prep.
Crow, Ralph Emerson	Moundsville	Summer School
Cunningham, Nelle Rebecca	Pt. Marion, Pa.	Commercial
Currey, Percy Howell	Flemington	3rd Year Prep.
Dadisman, Minnie	Grafton	Summer School
Daniels, Mabel Clare	Connellsville, Pa.	Summer School
Daugherty, Susie Hopkins	Franklin	Summer School
Davis, Gertrude Vaughan	Coalton	Music
Davis, George Garrett	Sutton	4th Year Prep.
Davis, Marguerite Jane	Morgantown	Music
Davis, Nancy Elizabeth	Fouke, Ark.	Summer School
Davis, Pearl	Cameron	4th Year Prep.
Dawson, Anna Lola	Morgantown	Music
DeBerry, Thomas Graham	Terra Alta	4th Year Prep.
DeBrocq Claudia Marie	Morgantown	Commercial
DeBrocq, Edgar Leon	Point Marion, Pa.	Music
Deitz, Charles Anderson	Blue Sulphur Spr'gs	2nd Year Prep.
Deusenberry, Ruby Dale	Morgantown	Art
DeWitt, Lillie Irene	Terra Alta	Summer School
Dickens, Ulysses Sidney	Beckley	Summer School
Dixon, Ida Amanda	Rowlesburg	Music
Donley, Dica Evlyn	Bald Hill	Summer School
Dorrell, Martha	Morgantown	3rd Year Prep.
Dorsey, Bessie Gay	Short Creek	Summer School
Downey, Susan Josephine	Wellsburg	Summer School
Duff, Anna May	Smock, Pa.	Summer School
Duling, Irl Noel	Morgantown	3rd Year Prep.
Duling, Orton Everet	Morgantown	3rd Year Prep.
Dunbar, Bettie Adeline	Kieffer	Summer School

Duncan, Carl Ray	Uffington	3rd Year Prep.
Duthie, Grace Irene	Clarksburg	Summer School
Egbert, Alberta Ruth	Morgantown	Music
Ellis, Alfonzo Lee	Mountainburg, Ark.	2nd Year Prep.
Elsey, Mae	Amboy	Summer School
Engle, Grace	Progress	Summer School
Engle, Alice	West Union	2nd Year Prep.
Frankhauser, Pearle Leona	Moundsville	Summer School
Felton, Albert	Davis	4th Year Prep.
Fenton, Winifred Belle	Elkins	Summer School
Fetty, Lulu	Hagans	Summer School
Field, Helen Preston	Morgantown	Summer School
Fike, Arthur	Terra Alta	2nd Year Prep.
Fisher, Gladdine Ada	Morgantown	Music
Fisher, Mary Ruth	Morgantown	2nd Year Prep.
Flesher, Ethel Murty	St. Marys	Summer School
Fleshman, Effie Margaret	Blue Sulphur Spr'gs	Summer School
Flogercy, Martha	Enterprise	Summer School
Floyd, Lulu Ann	Sutton	Summer School
Foley, Irene Staunton	Grafton	Summer School
Forman, Nancy Blanche	Amboy	Summer School
Forman, Hattie Estelle	Grafton	Summer School
Forman, Maucealeene	Morgantown	Music
Fortney, Hugh Goff	Lumberport	4th Year Prep.
Fry, Ruth	Morgantown	4th Year Prep.
Gandee, Ethel Adele	Moundsville	Music
Gandy, Frank Warren	Terra Alta	Summer School
Gandy, Mary Ann	Terra Alta	Summer School
Garber, Frankie Folsom	Elkins	Summer School
Garrett, Anna	Clarksburg	Summer School
Garrett, Bessie	Clarksburg	Summer School
Garrison, Blanche Edith	Wadestown	Music
Gaskill, Rose Elizabeth	Fairmont	Music
Gaskins, Howard Milton	West Union	Summer School
Gatrell, Mary Elizabeth	Fairmont	Summer School
Gaughan, Sadie Cecelia	Mannington	Summer School
Genin, Olga	Morgantown	Music
Gibbons, Teresa	New Martinsville	Summer School
Gibson, Ora	Sutton	Summer School
Gibson, Zettie May	Pisgah	Summer School
Gilhooley, Mary Margaret	Ronceverte	Summer School
Ginkel, Iva Elenora	Morgantown	Music

Given, Ida Susan	Wade	Summer School
Glover, John Franklin	Morgantown	3rd Year Prep.
Gochenour, Ernest Fendall	Moorefield	Summer School
Gorman, Karl Hartman	Morgantown	4th Year Prep.
Graber, Gordon Lawrence	Allegheny, Pa.	2nd Year Prep.
Graham, Hattie Rebecca	Belmont	Summer School
Graham, Ohley Forest	Elkins	4th Year Prep.
Graves, Pansy Olive	Bridgeport	Summer School
Gregg, Aaron Lambert	Blue	Summer School
Gregg, Lucile Chase	Morgantown	Music
Grimes, Elizabeth Black	Ravenswood	Summer School
Grosscup, Cedar Vickery	Terra Alta	Summer School
Groves, Artie Russell	Cuzzart	3rd Year Prep.
Groves, Inez Myrtle Ward	Craigsville	Music
Guice, Charles Pugh	Grafton	Summer School
Guy, Nannie Gooch	Marion, N. C.	Summer School
Hackney, Lillian Grey	Morgantown	Music
Hagans, Louise Hamilton	Morgantown	Summer School
Haines, Blair Monroe	Romney	2nd Year Prep.
Hale, Florence	Weston	Summer School
Hale, Ruth Regina	Weston	Summer School
Hall, Margaret	Proctor	Summer School
Hall, Viola Myrtle	Morgantown	Commercial
Hamilton, Elvin Andrew	Richwood	2nd Year Prep.
Hamilton, Florence Ethel	Grafton	Summer School
Hammel, Eugene Chalmers	Mannington	3rd Year Prep.
Hammer, Fred	Ruddle	Cer. in Agr.
Hanford, James Lawrence	Morgantown	3rd Year Prep.
Hansberger, Thomas Frederick	Peterstown	Diploma Agr.
Harman, Ida Grace	Macksville	Summer School
Hart, Louella Florence	Tunnelton	Summer School
Hartigan, Mary Virginia	Denver, Colo.	Music
Haught, Lesley	Morgantown	Music
Hawkins, Opie Maud	Pullman	Music
Headley, Leonidas	Parkersburg	Summer School
Hechmer, Adrienne Josephine	Grafton	Summer School
Hechmer, Marie Antoinette	Grafton	Summer School
Hedrick, Anna Bell	Alderson	Commercial
Heironimus, Ashby Rhea	Grafton	Summer School
Heiskell, Bess	Davis	Music
Heiskell, Edgar Frank	Davis	3rd Year Prep.
Held, Robert Lee	Towson, Md.	3rd Year Prep.
Henderson, Karl Lovell	Charleston	4th Year Prep.

Herndon, Nettie Southworth	Terra Alta	Summer School
Higgs, Glenna Fay	Moundsville	Summer School
Hodges, Eliza Pearl	Morgantown	Music
Hough, Ethel Rebecca	Morgantown	Music
Houseman, Jeannette	Belle Vernon, Pa.	Summer School
Houseman, Lucy Eleanor	St. Marys	Summer School
Howard, Opal Flodell	Cameron	Summer School
Hoylman, Joseph Newton	Bramwell	Summer School
Hubbs, Jessie Logan	Moundsville	Summer School
Hughes, Eva Elmyra	Spencer	Summer School
Hughes, Texie Eva	Elkins	Commercial
Humphreys, Susie	Charleston	Summer School
Hundertmark, Olga	Waynesburg, Pa.	Summer School
Hunt, Everett Answorth	Belington	Summer School
Hutchins, William Sheldon	Wheeling	Summer School
Ice, Martha Byrd	Farmington	Summer School
Irwin, Maud Ernestine	Morgantown	Commercial
Jackson, Roberta	Grafton	Summer School
Jackson, Clarence Atkeson	Lewisburg	3rd Year Prep.
Jacobs, Chauncey Dotey	Wellsburg	Summer School
Jacoby, Viletta	Minden	Summer School
Jarvins, Lucy Jane	Charleston	Summer School
Jenkins, Katherine Virginia	Morgantown	Music
Jerrome, Claudia Vaughn	West Liberty	Summer School
John, Lemuel Nimrod, Jr.	Van Voorhis	2nd Year Prep.
Johns, Oliver	Homeside	Summer School
Johnson, Anna Hayes	Morgantown	Music
Johnson, Eliza Evans	Kearneysville	Summer School
Johnson, Kate	Morgantown	Summer School
Johnson, Lula May	Willow Bend	Summer School
Johnson, Margaret Franklin	Willow Bend	Summer School
Johnson, Sue Montgomery	Keyser	Summer School
Johnson, Virgie	Bluefield	Summer School
Jones, Goldie Leona	Morgantown	Music
Joseph, Marie	Morgantown	Music
Kaler, George Rannells	Athens	3rd Year Prep.
Keck, Mary Morrison	Morgantown	Music
Keever, Carrie Rowena	Belleville	Summer School
Keith, Fodd	Harrisville	Summer School
Kelley, Edna Margaret	Morgantown	Art
Kelley, Benjamin Harry	Terra Alta	Summer School

Kemp, Walter William	Captina	Summer School
Kemper, Esta Fruman	Freemansburg	3rd Year Prep.
Kennedy, Eunice	Lost Creek	Summer School
Kilmer, Bertha Eliza	Martinsburg	Summer School
King, John Tolbert	McMechen	Summer School
Kinsey, Jackson Clyde	Mannington	Music
Knowlton, Helen Riggan	Morgantown	Music
Krak, Jan Berghuis	The Hague, Holland	Music
Lambert, Fred Bussey	Barboursville	Summer School
Lanham, George Conn	Independence	Summer School
Larkin, Florence Ella	Philippi	Summer School
LaRue, Ethel May	Morgantown	Art
LaRue, Mary Gertrude	Morgantown	Art
Law, Verner Vadis	Lawford	Dip. Agr.
Layton, Lulu Eugenia	Morgantown	Music
Leonard, Hallie Keesy	Salem	Music
Lewellen, Laurence Seaman	Spencer	3rd Year Prep.
Lewis, Anna Margaret	Wellsburg	Summer School
Lewis, Harold Russell	Morgantown	Summer School
Lewis, Mary Annie	Morgantown	Art
Linton, William Lloyd	Wellsburg	4th Year Prep.
Lively, William Thompson	Charleston	4th Year Prep.
Lloyd, Georgia	Ravenswood	Summer School
Lockard, Goldie	Pt. Marion, Pa.	Music
Lotts, Waldo Siler	Pennbrooke	2nd Year Prep.
Lugar, Lelia Ethel	Monitor	Summer School
Macklin, Nana	Mannington	Music
Madigan, Jessie Bridget	Morgantown	Music
Madragonis, George James	Morgantown	Summer School
Mann, Channing Livingston	Parkersburg	Dip. Agr.
Martin, Leroy Jehu	Grafton	Summer School
Martin, Mollie Evaleen	Martinsburg	Summer School
McBee, Claude	Independence	Summer School
McBee, Lena Griffin	Independence	Summer School
McCaffry, Pearl	Berkeley Springs	Summer School
McIntosh, Carrie	Mason	Summer School
McKinney, Mary Louise	Fairmont	4th Year Prep.
McKown, Darrel	Spencer	Summer School
McVeigh, Leslie	Thomas	Summer School
Meek, Ellen Mehollin	Moundsville	Summer School
Miller, Edward Newton	Valley Point	Summer School
Miller, James Wesley	Boaz	Summer School

Miller, Joseph Shields	Fairview	4th Year Prep.
Miller, Lois Evalyne	Morgantown	Music
Miller, Vivian	Morgantown	Music
Miller, William Frederick	New Cumberland	Dip. Agr.
Milligan, Lillie Margaret	Marlinton	Summer School
Minor, Helen	Morgantown	4th Year Prep.
Mitchell, Phoebe	Weston	Summer School
Moffatt, Benjamin Harrison	Shinnston	4th Year Prep.
Mollenauer, Adeline	Eighty-four, Pa.	Summer School
Moore, Fred Van Voorhis	Van Voorhis	Dip. Agr.
Moore, Mary Gertrude	Bramwell	Summer School
Morgan, Ethel	Porters Falls	Summer School
Morris, Floyd Ellen	Pine Grove	Summer School
Morris, Hattie Rae	Wasp	Summer School
Morrison, Arphad Paul	Salem	Summer School
Morrow, Nannie R. Cameron	Fairmont	Summer School
Moser, Esther May	Smithfield, Pa.	Summer School
Moyers, Iva May	Harrisville	Summer School
Muldoon, Ralph Wicliffe	Morgantown	Dip. Agr.
Murray, William Walter	Pageton	Summer School
Neal, Myrtle Mabel	Bungers	Summer School
Nefflen, Myra May	Keyser	Summer School
Nestor, Silas James	Hovatter	Summer School
Newlon, Dellet	Grafton	Summer School
Newman, Dora Lee	Glendale	Summer School
Newman, Ora	Independence	Summer School
Nicols, Gertrude Steele	Grafton	Summer School
Nicols, Margaret Elizabeth	Grafton	Summer School
Nicholls, Adele Emelia	Morgantown	Music
Norman, Elsie Mae	Spencer	Summer School
Norton, Alah Frances	Maggie	Summer School
Nuzum, Myrtle	Grafton	Summer School
Oglevee, Luella	Connellsville, Pa.	Summer School
Orr, Lucy Mae	Masontown	Summer School
Osborne, Alex Campbell	Clarksburg	4th Year Prep.
Parker, Alice	Fairmont	Summer School
Parker, George	Morgantown	Music
Parkinson, Harry Glenn	Sparta, Pa.	Summer School
Patterson, James Howard	Sutton	Summer School
Pedicord, Aletha Bell	Benwood	Summer School
Pedicord, Harry Lewis	Benwood	Summer School

Pence, Maggie Gray	Greenville	Summer School
Pepper, Wade	Flemington	2nd Year Prep.
Pickett, Winifred	Moundsville	Summer School
Pixler, Bertha Lee	Morgantown	Commercial
Plymale, Myrtle Blanche	Dunleith	Summer School
Pogue, Ila	West Liberty	Summer School
Polley, William Albert	Benwood	3rd Year Prep.
Porter, Imogene	Connellsville, Pa.	Summer School
Potter, Nellie Blanche	Morgantown	2nd Year Prep.
Powell, Jonathan Corbley	Federal	2nd Year Prep.
Prentice, Laura	Ronceverte	Summer School
Ramsburg, Mamie	Weston	Summer School
Ramsey, Ora Belle	Roanoke	Commercial
Rector, Martha Dolly	Grafton	Summer School
Reid, Roswell Schell	Star City	Summer School
Reynolds, Landon Taylor	Princeton	2nd Year Prep.
Riggs, Virginia	Fairmont	Summer School
Rightmire, Clara Alice	Wildell	Summer School
Riley, Elsa Irene	Ripley	Summer School
Ring, Royal Hugh	Richwood	2nd Year Prep.
Ringer, Bettie May	Morgantown	2nd Year Prep.
Ritchie, Charles	Beryl	4th Year Prep.
Robertson, Henry Clay	Charleston	Summer School
Robinette, Rosalie Agnes	Washington, D. C.	Summer School
Robinson, French	Elizabeth	4th Year Prep.
Robinson, Joseph Ben	Mount Clare	Summer School
Robinson, Libbie Jean	Cheat Haven, Pa.	Summer School
Rogers, Mary Washington	Morgantown	Music
Rogers, Percy Earle	Dry Fork, Va.	2nd Year Prep.
Rouchey, Verna Mae	Sistersville	Summer School
Rowan, Charles Somer	Vanderbilt, Pa.	Summer School
Rowley, Bessie	Ravenswood	Summer School
Ryan, Maude Givens	Shawsville, Va.	Summer School
Samples, Charles William	Clarksburg	Summer School
Sanders, John Augustus	Oceana	2nd Year Prep.
Saurborne, Sylvia Mabel Barnes	Bridgeport	Summer School
Sawyer, Langdon Freeman	Grafton	Summer School
Schenerlein, Bernard Wallace	Wheeling	4th Year Prep.
Scott, Lessye	Masontown	Summer School
Scott, Lorena Bernice	Bruceton Mills	Music
Semans, Georgia Anna	Morgantown	Commercial
Semans, Mary Ruth	Morgantown	Music

Shafer, Carlton Marma	Morgantown	3rd Year Prep.
Shaver, Joseph Sheridan	Rowlesburg	Summer School
Shelby, Minerva	Morgantown	Commercial
Shepherd, Rebecca Elizabeth	New Martinsville	Summer School
Shepler, Katherine Emma	Scottdale, Pa.	Summer School
Shriver, Herschel Leasure	Star City	4th Year Prep.
Shriver, Verella May	Morgantown	Music
Sigler, Landon James	Sutton	3rd Year Prep.
Simmons, Gerrald Brenton	Linden	Dip. Agr.
Sisler, Rebecca Katherine	Terra Alta	Summer School
Six, Maud Edna	St. Cloud	Music
Slagle, Turie	Kittanning, Pa.	Summer School
Smith, Ada Ruth	Salem	Summer School
Smith, Ethel Gay	Morgantown	Music
Smith, Florence Christine	Kenova	Summer School
Smith, James Clyde	Morgantown	Summer School
Smith, Jett Lambert	Morgantown	4th Year Prep.
Smith, Minor Francis	West Union	Summer School
Smith, Regina Constance	Morgantown	Music
Snider, Clifford Raymond	Spencer	4th Year Prep.
Snider, Harvey Dew	West Union	Summer School
Snider, Mildred Jasmine	Spencer	Summer School
Snodgrass, Ottis Rymer	Morgantown	2nd Year Prep.
Snyder, Vena Jane	Morgantown	2nd Year Prep.
South, Etna Bell	Bald Hill, Pa.	Music
Spangler, Robert Clifton	Peterstown	Summer School
Specht, Louisa Viola	St. Albans	Summer School
Spencer, Effie Beatrice	Parkersburg	Summer School
Spencer, Ida Isadore	Parkersburg	Summer School
Springer, Adah Florence	Flemington	Summer School
Stansberry, Joseph Herschel	Romney	3rd Year Prep.
Starcher, Beulah River	Clarksburg	Music
Steele, Mary Pearl	Morgantown	4th Year Prep.
Steele, Nell Victoria	Morgantown	Music
Stemple, Isabel	Amboy	Summer School
Stevens, Thompson	Glens Falls, N. Y.	3rd Year Prep.
Straley, George Edgar	Ripley	Summer School
Swaney, Braden Hurst	Smithfield, Pa.	Summer School
Swiger, Goldie	Fairmont	Summer School
Switzer, Ethel Clarence	Philippi	Summer School
Sycafoose, Francis Newton	Webster Springs	Summer School
Talbott, Charlotte Anne	Sistersville	Summer School
Taylor, Madelene	Ripley	Summer School

Theakston, Romaine	Morgantown	3rd Year Prep.
Thomas, Janet Ann	Morgantown	Commercial
Thompson, Harrie Lee	Bridgeport	Summer School
Thompson, James	Morgantown	2nd Year Prep.
Thrush, Richard William	Headsville	Summer School
Tibbets, Virginia Elizabeth	Beryl	2nd Year Prep.
Timmons, Daisy Ella	Clator	Summer School
Toynbee, Anna Marie	Morgantown	Commercial
Tracy, Dora	Grafton	Summer School
Tracy, Elizabeth Ellen	Bluefield	Summer School
Tracy, Frank	Grafton	Summer School
Tracy, Nannie	Wheeling	Summer School
Tucker, Mary Esther	Cassville	2nd Year Prep.
Tumlin, Mary Margaret	Ravenswood	Summer School
Turner, Bird Margaret	Moundsville	Summer School
Tyers, Ella	Wellsburg	Summer School
Vance, Harry Wellington	French Creek	Summer School
Van Meter, Sallie Bell	Moorefield	Summer School
Vlahos, Harris John	Morgantown	2nd Year Prep.
Wade, Sallie Shields	Morgantown	Commercial
Walker, Clyde La Guage	Fayetteville	4th Year Prep.
Ward, Elva Mabel	Kermit	Summer School
Waters, Martha Boyers	Morgantown	Commercial
Watson, Bess Velma	Thayer	Summer School
Weaver, Ida Lee	Morgantown	Summer School
Weaver, James Plummer	Morgantown	3rd Year Prep.
Weaver, Jessie Beryl	Morgantown	Art
Weaver, Noel Price	Morgantown	Commercial
Weigel, Roscoe Conkling	Davis	2nd Year Prep.
Weller, Earnest Harrison	Martinsburg	Summer School
West, Leona Folsom	Spencer	Summer School
West, Ottie Virginia	Newburg	Summer School
Westfall, Daisy	Harrisville	Summer School
Whaley, Claude	Finch	Summer School
White, Bash	St. Albans	Summer School
White, Florence Helen	Grafton	Summer School
White, Frank S.	Morgantown	Summer School
White, Grace	Grafton	Summer School
White, Hattie Jane	Terra Alta	Summer School
Whitney, Cornelia	Washington, D. C.	Summer School
Wilhelm, John Abram	Smithfield, Pa.	Summer School
Williams, Ruth Hannah	New Castle, Pa.	Summer School

Wilson, Ada	Harrisville	Summer School
Wilson, Charles Jackson	Glen Easton	Summer School
Wilson, Minnie Susan	Dessie	Summer School
Winter, Bessie Pearl	Morgantown	Commercial
Winter, Elsie Lee	Morgantown	Commercial
Wintringer, Margaret Donaldson	Steubenville, Ohio	Summer School
Wood, Virginia Hopewell	Moorefield	Summer School
Woodford, Bessie	Morgantown	Art
Woofter, Stella Medina	Washington	Summer School
Working, Holbrook	Morgantown	4th Year Prep.
Wright, Mary Margaret	De Smet, S. D.	Art
Wright, Helen Rachel	Morgantown	Summer School
Yarger, Hazelle Estella	Morgantown	Commercial
Yoke, French Arlington	Morgantown	3rd Year Prep.
Zimmerman, Goldie Fern	Kirby, Pa.	Music

IRREGULAR STUDENTS

Students whose names appear in the following list are taking work in some School or Extension Division of the University, but they are not regularly registered and, for reasons satisfactory in each case, are doing less than the regular amount of work.

Anderson, Charles Otis	Crawford	S.C.Agr.
Anderson, Florence Elizabeth	Morgantown	Physical Training
Anderson, Waitman Claude	Crawford	S.C.Agr.
Arnold, Arthur Thomas	Moundsville	S.S.Methods
Baker, Marguerite	Morgantown	Music
Bardall, John Cambridge	Moundsville	S.S.Methods
Barker, Nellie Virginia	Morgantown	Physical Training
Barlow, Willis D.	Beverly	S.C.Agr.
Batten, May	Morgantown	Music
Bayles, Glenda Lettitia	Morgantown	Physical Training
Bayles, Margaret Henrietta	Morgantown	Physical Training
Beaumont, Arthur Brittingham	Morgantown	Music
Beaumont, Laura	Morgantown	Night Class
Behrens, Edward Charles Wm.	Sherrard	S.C.Agr.
Bent, George Washington	Kingwood	S.S.Methods
Berry, Cora Abigail	Morgantown	Night Class
Berry, French Enson	Rivesville	S.C.Agr.
Bierer, Barbara	Morgantown	Physical Training
Bierer, Sarah	Morgantown	Physical Training
Bigler, Lavina	Morgantown	Music
Bird, Martha Ellanore	Elkins	S.S.Methods
Boehler, Lena Mary	Morgantown	Music
Boehler, Louise Anna	Morgantown	Music
Briggs, Frederick Foye	Morgantown	S.S.Methods
Briggs, Laura Elizabeth	Big Rapids, Mich.	Music
Briggs, Marion Ellis	Morgantown	Physical Training
Britton, Luther Sherman	Morgantown	Night Class
Brooks, Earle Amos	Weston	S.S.Methods
Brooks, Ellis Walton	French Creek	S.C.Agr.
Brown, Elizabeth	Morgantown	Physical Training
Burnett, Cassandra Courtney	Warren, Ohio	Music
Bush, Goff	Weston	S.C.Agr.
Cale, John E.	Masontown	S.C.Agr.
Cather, Wilber Earl	Morgantown	Night Class

Caufman, Jonas Elbert	Southside	S.C.Agr.
Christman, Emily Irene	Morgantown	Music
Christy, Mary Louise	Morgantown	Physical Training
Clark, Charles Eric	Morgantown	S.C.Agr.
Clark, John Ray	West Union	S.S.Methods
Clark, John William	Morgantown	Irregular
Clarke, James Henry	Morgantown	S.S.Methods
Clarke, Nancy Dorothy	Morgantown	Physical Training
Clelland, Mary Ellen	Morgantown	Physical Training
Cobun, Helen Josephine	Morgantown	Physical Training
Coffield, Aloinzia Elmer	Proctor	S.C.Agr.
Conn, Elenore	Pt. Marion, Pa.	Music
Coogle, Rachel Agnes	Morgantown	Physical Training
Core, C. E.	Cassville	S.C.Agr.
Cornett, Louis Culver	New Martinsville	S.C.Agr.
Courtney, Catherine	Morgantown	Music
Courtney, Frances Lee	Morgantown	Music
Courtney, Wilma Marie	Morgantown	Music
Cox, Margaret Elizabeth	Morgantown	Music
Cox, Nan Leigh	Fairmont	Music
Cox, Ollie Cornelia	Fairmont	S.S.Methods
Cunningham, Jay Eddie	Pennsboro	S.C.Agr.
Dalinsky, Bessie	Morgantown	Music
Darnell, Dare	Weston	S.C.Agr.
Davies, Phillip J.	Morgantown	Music
Davis, Eleanor Josephine	Morgantown	Music
Davis, Mabel Louise	Morgantown	Physical Training
Dawson, Pansy Byrl	Clarksburg	Music
De Brocq, Denise	Morgantown	Night Class
De Moss, Bertha Lee	Morgantown	Music
De Moss, Fred Eugene	Morgantown	Music
Dunham, Florence Clayton	Fairmont	Music
Dutton, Helen Marie	Morgantown	Physical Training
Erd, Elsie Josephine	Morgantown	Physical Training
Erd, Winnifred Elizabeth	Morgantown	Physical Training
Evans, Edith Elizabeth	Morgantown	Physical Training
Evans, Phyllis Miriam	Morgantown	Music
Field, Linda	Morgantown	Domestic Science
Finberg, Leonore Dorothy	Morgantown	Physical Training
Fisher, Leona	Morgantown	Physical Training
Fitch, Jessie Johnson	Morgantown	Music
Fitch, Katherine Finnell	Morgantown	Art
Fleming, Frank Ellsworth	Morgantown	S.C.Agr.

Fleming, Herbert Waitman	Cassville	S.C.Agr.
Fleming, Pauline	Morgantown	Physical Training
Fogg, Julia Liston	Morgantown	S.C.Agr.
Forman, Pauline Fay	Morgantown	Physical Training
Fravel, Mary Stewart	Morgantown	Art
Friend, Lloyd Lowndes	Charleston	S.S.Methods
Garbarino, Augustina Marie	Morgantown	Physical Training
Garrison, Helen Virginia	Morgantown	Music
Garrison, Lillian Knight	Morgantown	Music
Gaschler, Emma Clara	Morgantown	Music
Gidley, Rilla Laretta	Morgantown	Music
Gilmore, Virginia	Morgantown	Music
Gneiser, Hattie Violet	Morgantown	Music
Graham, Martha Virginia	Wheeling	S.S.Methods
Graham, Sara Catherine	Wheeling	S.S.Methods
Gregg, John Morton	Morgantown	Music
Gregg, Margaret Virginia	Morgantown	Mus. & Phys. Tr'g
Griffin, Alice	Clarksburg	S.S.Methods
Grisso, Isaac Newton	Fairmont	S.S.Methods
Grumbein, Nellie Bassel	Morgantown	Music
Hackney, Samuel	Morgantown	S.S.Methods
Hague, William T.	New York City	S.C.Agr.
Hall, Belle	Morgantown	2nd Year Prep.
Hall, Golda Elizabeth	Morgantown	Art
Hall, Spurgeon	Jane Lew	S.C.Agr.
Handley, Garland Love	Teays	S.C.Agr.
Hanford, Josephine	Morgantown	Music
Hardy, Josephine	Winterport, Maine	Music; Dom. Sc.
Harriman, Oliver Bishop	Wappocomo	S.C.Agr.
Hartley, Carrie Mildred	Morgantown	Physical Training
Hartley, Martha Wilmena	Morgantown	Physical Training
Heenan, Sarita Florice	Morgantown	Music
Herod, Audra Evelyn	Pt. Marion, Pa.	Music
Hess, Carelton Vincent	Morgantown	Music
Hiatt, Albert Jackson	Moundsville	S.S.Methods
Hickman, Laura Josephine	Morgantown	Physical Training
Hoffman, Daniel Clark	Morgantown	S.C.Agr.
Hood, Charles P.	Shinnston	S.C.Agr.
Howell, Ruth Evadne	Uffington	Physical Training
Hughes, Catherine Frances	Morgantown	Physical Training
Hughes, Dorothy Carrington	Morgantown	Physical Training
Humphrey, Evett Stevenson	Belleville	S.C.Agr.
Humphreys, Ira Dwight	Organ Cave	S.C.Agr.

Ice, Jessie	Flemington	S.S.Methods
Jacobs, Virginia	Morgantown	Art
Jenifer, Elizabeth Margaret	Morgantown	Music
Jeness, Charles Kelley	Morgantown	S.S.Methods
Johnson, John William	Alderson	S.C.Agr.
Jones, Bertha Constance	Morgantown	Music
Jones, Josephus	Morgantown	S.C.Agr.
Jones, Margaret Elsie	Morgantown	Music
Jones, Margaret Helen	Morgantown	Physical Training
Jones, Trevor Morris	Morgantown	Music
Judy, Elmer	Circleville	S.C.Agr.
Kendall, Frederick Amos	Gazil	S.C.Agr.
Kephart, George W.	Masontown	S.C.Agr.
Kirsch, Lena	Morgantown	Physical Training
Klages, Edward Charles	Wheeling	S.C.Agr.
Kuntz, John A.	Swiss	S.C.Agr.
Lake, Roscoe Verne	Washington, D. C.	S.C.Agr.
Lawson, Naaman W.	Weston	S.C.Agr.
Lazelle, Cecelia Mabel	Morgantown	Physical Training
Leonard, Pauline Wiggin	Morgantown	S.C.Agr.
Lewis, Anna Virginia	Morgantown	Physical Training
Lewis, De Maris Stewart	Morgantown	Physical Training
Limerick, Ida Fitzhugh	Morgantown	Music
Liming, Dallas	Morgantown	S.C.Agr.
Linger, Ella Elizabeth	Horner	S.S.Methods
Liston, Ray	Morgantown	S.C.Agr.
Lough, Lydia May	Weston	S.S.Methods
Loyd, Elizabeth Dillie	Morgantown	Music
Lunan, Beulah Lee	Wheeling	S.S.Methods
Mann, Samuel Alexander	Fort Spring	S.C.Agr.
Marvin, Alfreda Rosilla	Morgantown	Music
Marvin, Louis Harold	Morgantown	Music
Mathers, Margaret May	Morgantown	Physical Training
Mattson, Ellen Anna	Morgantown	Music
Mattson, Elvera Leonor	Morgantown	Music
McDonald, Raymond O.	Hanging Rock	S.C.Agr.
McLean, John Henry	Parkersburg	S.S.Methods
McNeill, Genevieve	Morgantown	Music
McNeill, Mary Eileen	Morgantown	Music
Mestrezat, Mary Helen	Morgantown	Music
Miller, Leroy Brooks	Morgantown	Music

Miller, Virginia Baker	Morgantown	Music
Morgan, Emily Josephine	Morgantown	Physical Training
Morgan, Mary Ellen	Buckhannon	Music
Morrison, Ida Liberty	Grafton	Music
Mulvey, Virginia Catherine	Alma, Mich.	Music
Mumford, Arthur L.	Williamstown	S.C.Agr.
Murdock, Ethel Adeline	Kingwood	Music
Murray, Eli Orval	Mannington	S.C.Agr.
Murray, Minnie E.	Mannington	S.C.Agr.
Nicholls, Sterling Wenzel	Morgantown	Music
Nolan, Myrta Philips	Morgantown	S.C.Agr.
Ochiltree, Charles Hanson	Silver Hill	S.S.Methods
O'Keson, Genevieve	Morgantown	Physical Training
Outcalt, William	Martinsburg	S.S.Methods
Page, Asa Dell	French Creek	S.C.Agr.
Pastorius, Viola May	Morgantown	Physical Training
Peyton, Alice Gertrude	Southside	S.C.Agr.
Pocock, Alice Katherine	Morgantown	Physical Training
Pollock, Rebecca Luella	Waynesburg, Pa.	Night Class
Postman, Virginia Ethel	Morgantown	Physical Training
Powell, Martha Virginia	Morgantown	Physical Training
Pratt, Elizabeth Louise	Morgantown	Physical Training
Pratt, Martha Pauline	Morgantown	Physical Training
Price, Mary Belle	Morgantown	Music
Price, Mildred Louise	Morgantown	Music
Price, Otella Beatrice	Morgantown	Art
Prim, Ella Gladys	Grafton	S.S.Methods
Rector, Gertrude	Clarksburg	S.S.Methods
Rector, Samuel Jones	Morgantown	S.C.Agr.
Reiner, Ada Eleanor Means	Morgantown	Art
Richards, Elizabeth Davis	Morgantown	Music
Ridgway, Francis Marie	Morgantown	Physical Training
Ridgway, Nellie Louise	Morgantown	Physical Training
Ridings, Evelyn Maude	Morgantown	Physical Training
Robbins, Ruth	Morgantown	Music
Roberts, David John	Morgantown	Music
Robinson, Ransler G.	Brown	S.C.Agr.
Ross, May Darling	Morgantown	Art
Russell, John Crawford	Williamstown	S.C.Agr.
Scott, Bessie Catherine	Morgantown	Music

Selby, Mildred Virginia	Morgantown	Physical Training
Shafer, Guy Carlton	Independence	S.C.Agr.
Shaffer, Minnie Thorne	Elkins	S.S.Methods
Shoemaker, Claire Angela	Morgantown	Physical Training
Shoemaker, Dorothy Elizabeth	Morgantown	Physical Training
Shoulders, Charles Jesse	Horner	S.C.Agr.
Shriver, Alice Pauline	Morgantown	Music
Shuttlesworth, Lucy Adline	Morgantown	Physical Training
Simpson, Agnes Virginia	Morgantown	Physical Training
Simpson, Mildred	Morgantown	Physical Training
Simms, Charles Carroll	Lewisburg	S.C.Agr.
Smith, Lida Evans	Wheeling	S.S.Methods
Smith, Lillian Ballard	Morgantown	Domestic Science
Smith, Florence Anna	Morgantown	Music
Smith, Rhey T.	Morgantown	S.C.Agr.
Snyder, Virginia Ruhamah	Morgantown	Physical Training
Spence, Myrtle Virginia	Morgantown	Music
Stalnaker, Thomas Carl	Horner	S.C.Agr.
Stemple, Minnie Frances	Morgantown	Night Class
Stemple, Bertha Matilda	Morgantown	Night Class
Stewart, Mary	Morgantown	Mus. & Phys. Tr'g
Stoker, Isabel Florence	Morgantown	Music
Straight, Willa Ethyl	Fairmont	Music
Strickler, William Almond	Ellenboro	S.S.Methods
Stubbs, Catherine Ryther	Morgantown	Physical Training
Sturm, Frederick William	Shinnston	S.C.Agr.
Sullivan, May Burnice	Huntington	Domestic Science
Summers, Lucile	Parkersburg	S.S.Methods
Summers, Marshall Aaron	Parkersburg	S.S.Methods
Swisher, Wilkie Collins	Weston	S.C.Agr.
Tarr, Helen Elizabeth	Morgantown	Music
Taylor, Milo A.	Horner	S.C.Agr.
Teter, Claude Wesley	Buckhannon	S.C.Agr.
Thacker, Clarence	Fairmont	S.S.Methods
Thomas, Bessie	Morgantown	Music
Thomas, Elsie May	Morgantown	Physical Training
Thomas, Olwen Mary	Morgantown	Physical Training
Thompson, Marie	Morgantown	Music
Threasher, Albert Roscoe	Duo	S.C.Agr.
Titus, Ruby Gladys	Morgantown	Physical Training
Trevey, Otis M.	Moundsville	S.C.Agr.
Tucker, Mary Frances	Morgantown	Physical Training
Tucker, Rebecca Parthenia	Cassville	S.S.Methods
Tuckwiller, Rachel	Morgantown	S.S.Methods

Wade, Charlotte Esther	Mt. Morris, Pa.	Night Class
Wade, Georgia Chorpenning	Morgantown	Music
Wambaugh, Olive Mae	Morgantown	Music
Waters, Charles H.	Morgantown	S.C.Agr.
Waters, Ruby Belle	Morgantown	Art.
Weaver, Lulu May	Morgantown	Music
Weltner, Nellie Jeanette	Morgantown	Music
Wetsell, Mabel Eleanor	Morgantown	Music
White, Charlotte Ogden	Morgantown	Physical Training
White, Stark Arnold	Weston	S.S.Methods
Wilbourn, Clara Maud	Morgantown	Music
Wilkinson, Emma Eugenia	Wheeling	S.S.Methods
Wilkinson,Isabelle Howard	Wheeling	S.S.Methods
Williams, Gladys	Morgantown	S.S.Methods
Williams, Harriet	Morgantown	Music
Williams, Jenkins Lewis	Morgantown	Night Class
Williams, Mary Margaret	Morgantown	Music
Willis, Martha	Morgantown	Physical Training
Wolf, Gertrude Katie	Morgantown	Physical Training
Wolf, Lena	Morgantown	Music
Wolf, Rosie	Morgantown	Physical Training
Wood, Matthew Lawrence	Huntington	S.S.Methods
Wright, Beulah Kathleen	Morgantown	Physical Training
Zinn, Nellie Virginia	Morgantown	Music

Summary of Enrollment in Agricultural Extension Schools

Date	*Postoffice*	*County*	*Enrollment*
Sept. 7-13, 1910	Burnt House	Ritchie	34
Jan. 30-Feb. 4, 1911	Keyser	Mineral	46
Feb. 6-11, 1911	Pullman	Ritchie	27
Feb. 13-17, 1911	Romney	Hampshire	52
Mar. 13-17, 1911	Cairo	Ritchie	52
Mar. 20-24, 1911	Sinks Grove	Monroe	34
May 15-19, 1911	Gaston	Lewis	..

THE UNIVERSITY SCHOOLS—SUMMARY OF ENROLLMENT, 1910-1911.

(As Reported May 1, 1911)

Students regularly enrolled in:	Male	Female	Total
The School of Fine Arts	0	9	9
The School of Music	6	52	58
‡The Commercial School	1	18	19
*The Summer School	67	204	271
The Preparatory School	79	21	100
The School of Agriculture	11	0	11
Total	164	304	468
Irregular Students in			
Music	9	72	81
Art	0	8	8
Physical Training	0	65	65
Short course in Agriculture	54	7	61
†School of Sunday School Methods	20	19	39
Night and Saturday classes	4	11	15
Total	87	182	269
Entire enrollment at Morgantown (deducting names repeated)	251	486	737
Additional enrollment in Agricultural Extension School			245

*The total enrollment in the Summer School including those re-enrolled later in some other college or school of the University was 444.

†The total enrollment in the School of Sunday School Methods including those re-enrolled in some other college or school was 90.

‡Students enrolled this year in the Commercial School will hereafter be counted in the Department of Commerce in the College of Arts and Sciences or in the Preparatory School.

ENROLLMENT BY STATES

West Virginia	937
Pennsylvania	29
Washington, D. C.	3
Maryland	2
New York	2
Virginia	2
Holland	1
Arkansas	1
North Carolina	1
Colorado	1
Michigan	1
South Dakota	1
Maine	1
Total	982

SUMMARY OF STUDENTS IN WEST VIRGINIA UNIVERSITY, 1910-1911

	Male	Female	Total
Regularly enrolled in the colleges	344	100	444
Regularly enrolled in the schools	164	304	468
Irregular students enrolled in the schools	87	182	269
Enrolled in extension schools	237	8	245
Totals	832	594	1426

SUMMARY OF FACULTY, 1910-1911.

Professor Emeritus	2
Professors	41
Associate Professors	6
Assistant Professors	3
Instructors	15
Assistants	8
Library Staff	5
Experiment Station Staff	15
Total	95

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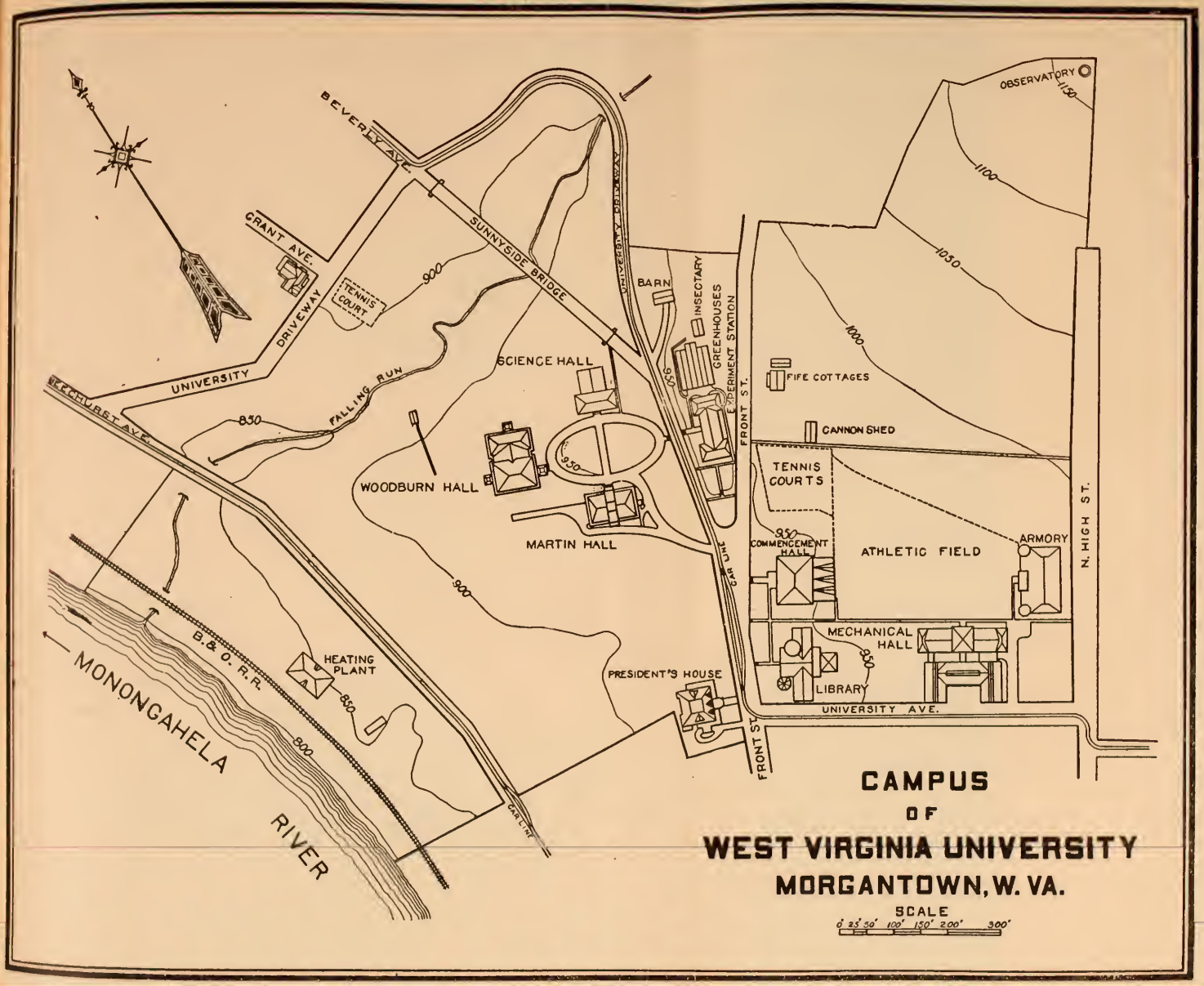
CAMPUS
OF
WEST VIRGINIA UNIVERSITY
MORGANTOWN, W. VA.
SCALE
0 25' 50' 100' 150' 200' 300'
OBSERVATORY
1150
1100
1050
1000
BEVERLY AVE.
GRANT AVE.
SUNNYSIDE BRIDGE
UNIVERSITY DRIVEWAY
TENNIS COURT
900
UNIVERSITY
FALLING RUN
850
BEECHURST AVE.
SCIENCE HALL
WOODBURN HALL
MARTIN HALL
950
BARN
INSECTARY
GREENHOUSES
EXPERIMENT STATION
FRONT ST.
FIFE COTTAGES
CANNON SHED
TENNIS COURTS
COMMENCEMENT HALL
ATHLETIC FIELD
ARMORY
N. HIGH ST.
CAR LINE
MECHANICAL HALL
LIBRARY
UNIVERSITY AVE.
PRESIDENT'S HOUSE
HEATING PLANT
B. & O. R.R.
MONONGAHELA RIVER
800

WEST VIRGINIA UNIVERSITY

CATALOGUE
1911 - - - 1912

ANNOUNCEMENT
1912 - - 1913

MORGANTOWN, WEST VIRGINIA
PUBLISHED BY THE UNIVERSITY

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CALENDAR FOR 1912, 1913, 1914

1912

JULY

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1913

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UNIVERSITY CALENDAR

1912

June 24, Monday .....Summer School Begins
August 23, Friday.....Summer School Ends
September 16, Monday ..... First Semester Begins
September 16, 17, Monday and Tuesday.....
.....Matriculation and Registration of Students
September 18, Wednesday.....First Recitations of First Semester
September 18, Wednesday, 10 A. M.....Fall Convocation
November 28 to December 1, inclusive.....Thanksgiving Recess
December 2, Monday.....Recitations Resume
December 21 to January 5, 1913.....Christmas Holiday Recess

1913

January 6, Monday .....Recitations Resume
January 25, Saturday.....Last Recitations of First Semester
January 27, Monday to January 30, Thursday, inclusive.....
.....Final Examinations of First Semester
February 4, Tuesday, (Registration Day)....Second Semester Begins
February 5, Wednesday.....First Recitations of Second Semester
February 5, Wednesday, 10. A. M.....Winter Convocation
February 22, Saturday..... ..Washington's Birthday, a Holiday
May 15, 16, Thursday and Friday.....High School Days
May 30, Friday.....Memorial Day, a Holiday
June 3, Tuesday.....Last Recitations of Second Semester
June 4, Wednesday, to June 7, Saturday, inclusive.....
.....Final Examinations of Second Semester
June 11, Wednesday.....Commencement

West Virginia University

MORGANTOWN

THE STATE BOARD OF CONTROL

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Charleston, West Virginia

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JOHN A. SHEPPARD .....Charleston, W. Va.
E. B. STEPHENSON, Treasurer.....Charleston, W. Va.

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State Capitol Building

Charleston, West Virginia

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The State Board of Regents has charge of all matters of a purely scholastic nature concerning the state educational institutions.

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The College of Law

CHARLES EDGAR HOGG, LL.D., Dean

The School of Music

LOUIS BLACK, Director

The Summer School

WAITMAN BARBE, Litt.D., Director

THE COUNCIL OF ADMINISTRATION

The President of the University and the Deans of the various colleges.

THE UNIVERSITY FACULTY

The President, Deans of the various colleges, Professors, Associate Professors and Assistant Professors in all divisions of the University, the Dean of Women, Commandant of Cadets, Director of the School of Music and the Librarian of the University.

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HIGH SCHOOL DAY. Professor ARMSTRONG, Professor FRIEND, and Director CHEZ.

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*Resigned March 1, 1912.

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Head of the Department of Commerce

RUDOLPH WERTIME — South Park
Head of the Piano Department

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CLYDE EMIL WATSON, M.D. — Morris Street
Assistant Professor of Anatomy and Pathology

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Assistant Professor of Dairying and Veterinary Science

JOHN BEHNY GRUMBEIN, B.S.M.E. — 195 Grant Street
Assistant Professor of Mechanical Engineering

ARLEIGH LEE DARBY, A.M. — White Building
Assistant Professor of Romance Languages

RACHEL HARTSHORN COLWELL, A.M. — University Driveway
Assistant Professor of Home Economics

HORACE ATWOOD, M.Sc.Agr. — Experiment Station Farm
Assistant Professor of Poultry Husbandry

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Instructor in Drawing and Painting

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Instructor in Violin

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Instructor in Woodworking and Foundry Practice

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Vice Director and Chemist

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Poultryman and Farm Superintendent

WILLIAM HORACE ALDERMAN, B.Sc.Agr. — 184 First Street
Horticulturist

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Agronomist

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HUBERT HILL, B.Sc.,M.Sc. — 213 Cobun Avenue
Assistant Chemist

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LUTHER FRANCIS SUTTON, B.SC.,B.S.AGR. 162 First Street
Assistant Horticulturist

WILLIAM J. WHITE Marion Street
Auditor

MARTHA A. STEWART 118 Willey Street
Librarian

URIAH BARNES, LL.B. 4 Ash Street
Secretary

LIBRARY STAFF

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Librarian

JESSICA GARDINER CONE 324 Willey Street
Assistant Librarian

KATHERINE CLIFTON HEDRICK Woman's Hall
Assistant in Law Library

ANNA GRACE COX, A.B. 316 Willey Street
Assistant Librarian

ROBERT LEE BATES 261 Willey Street
Assistant in Library

CLAIRE EGBERT HILBORN, A.B. 565 Pine Street
General Secretary, Young Men's Christian Association

JAMES SCOTT MURPHY, B.SC.M.E.,E.E. 108 Beverly Avenue
Foreman of University Grounds and Buildings

THE UNIVERSITY

HISTORICAL SKETCH

FOUNDATION

West Virginia University originated from the national land grant act of July 2, 1862, from the subsequent action of the state legislature in accepting and carrying out the provisions of the act, and from the foundations of an educational institution which had already been laid at Morgantown for half a century.

The act of 1862 granted lands or land script to each state in proportion to the number of its senators and representatives in Congress. The proceeds of the sale of these lands were to be invested in safe stocks yielding not less than five per cent. upon the par value of the stocks and this interest "inviolably appropriated by each state which may take and claim the benefit of this Act to the endowment, support and maintenance of at least one college where the leading objects shall be, without excluding other classical and scientific studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts in such manner as the legislature of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

On October 3, 1863, the West Virginia legislature, empowered by the constitution to foster education and organize institutions of learning in the interest of the people of the state, accepted the conditions of the act of Congress and appropriated $500.00 to defray the expenses of procuring and selling the land script and of investing the proceeds. Congress by act of April 14, 1864, extended the preceding act to West Virginia, and the latter received land script for 150,000 acres. By joint resolution of January 24, 1867, the legislature submitted to Congress strong reasons for an additional appropriation, but the appeal was without success.

Steps were soon taken to select a location for the college. Among the towns which made substantial offers to secure it was Morgantown, which was already the seat of Monongalia Academy (incorporated

by the Virginia legislature November 29, 1814), Morgantown Female Seminary (established 1831 and incorporated 1839), and Woodburn Female Seminary (incorporated January 4, 1858). On January 9, 1866, the board of trustees of the Monongalia Academy tendered to the legislature, for the use of the college, all its property, including Woodburn Female Seminary, estimated at $51,000, on condition that the college should be located at Morgantown. On January 30, 1867, the legislature accepted the property, and on February 7 passed an act permanently establishing the "Agricultural College of West Virginia," and authorizing the governor to appoint eleven suitable persons, one from each senatorial district, to constitute a board of visitors. The powers and duties of the board were clearly defined by the act and were largely the same as the subsequent powers and duties of the regents, except that the board was a close corporation filling vacancies produced by death of members, and each year electing two new members to fill the places made vacant by lot.

The eleven visitors were soon appointed and on April 3, 1867, held their first meeting at Woodburn Seminary. After the selection of Alexander Martin as president, they proceeded to discuss what style and character the college should assume—whether it should be for the exclusive purpose of training farmers and soldiers, or whether it should offer instruction in all the subjects that were generally understood to belong to the curriculum of a "college," comprising every essential department of education from the foundation upwards. They decided upon the latter. In addition to the preparatory department, in the academy building, they established "three distinct and separate departments of instruction in the college building": (1) collegiate; (2) scientific; (3) agricultural. They also provided for instruction in military tactics. They intended to establish primarily a college that would meet the needs of general education in West Virginia and that would eventually, by expansion, "be able to educate liberally young men in all the professions and pursuits of life."

By an act of March 3, 1868, the legislature appropriated $6,000 for the general use of the college, to be spent as the board might direct, and $10,000 to supplement the permanent endowment. A subsequent act (June 25, 1868), in order to provide better facilities, authorized the sale of Monongalia Academy and dwelling, and the application of the proceeds to the construction of another building on the main college grounds. In the following July the Academy building and grounds were sold to the board of education of Morgantown. Soon thereafter, in the presence of a large assemblage, the corner stone of Martin hall was laid.

GOVERNMENT

By the act of December 4, 1868, which changed the name of the college to "West Virginia University," the name of the "board of visitors" was changed to the "board of regents," with duties and powers defined practically as at present, and provision was made that vacancies in the board should be filed by the governor. On April 12, 1873, an act amending the school law contained a provision that the board of regents should consist of one person from each of the nine judicial circuits, to be appointed by the "board of the school fund;" but by an act of February 17, 1877, the power of appointment was conferred upon the governor with the advice and consent of the senate.

By an act of March 2, 1877, it was provided that the board should consist of one person from each senatorial district, to be appointed by the governor as provided by law; and that the board should be changed regularly by the retirement of two members each year after June 30, 1877. Vacancies on the board were to be filled by the governor as before. From 1877 to 1882, under this law there were twelve regents. From 1883 to June 1, 1895, there were thirteen.

The first bi-partizan board was created by the legislature of 1895 and began its term on June 1 of that year. Its members were divided into three groups, one of which was replaced every second year.

The act of 1901 provided for the appointment of a new board of nine members, "who shall be residents and voters of the state," and "who shall be divided into two classes consisting of four and five regents respectively." The term of office of the first class continued for two years, and the term of the second class for four years; and thereafter, the term of office of each class was to be four years (and until their successors were appointed and qualified). It was also provided that not more than six regents should be of the same political party and that "not more than one shall be appointed from the same senatorial district or county."

By legislative act of 1909 an important change was made in the control of the University. Under this act the financial and business affairs of the University and of all the other state educational institutions are directed by a state board of control consisting of three members appointed by the governor. This board also exercises a general control over the various public institutions of the state. The academic control of the University and also of the other educational institutions of the state, with the exception of the School for the Deaf, Dumb, and Blind, The Boys' Reform School, and The Girls' Industrial School, is vested in a single board of regents. The board is bi-partizan and consist of the state superintendent of free schools (ex officio), who is elected by the people, and of four other members who are appointed by the governor and are responsible to him for

the proper conduct of their duties. This board chooses its own chairman or president.

From 1877 to 1896 there was a standing executive committee which assisted in the administration of the University and reported to the board. Until 1886 its membership was local and did not include the president, except from 1868 to 1873. After 1886 its members were also members of the board of regents, except in 1894-5, when the secretary of the committee was a professor in the University. The number of members varied, starting with five, increasing to nine and finally decreasing to three.

The administrative offices created at the time of the establishment of the University were those of the president, the vice president, the principal of the preparatory school, and the superintendent of buildings and grounds. The office of vice president was abolished in 1899. In 1897 the office of assistant to the president was established, but it was abolished in 1911.

The University has had eight regular presidents. Alexander Martin resigned in 1875. He was succeeded by John W. Scott, (acting president), 1875-7; John Rhey Thompson, 1877-81; Daniel Boardman Purinton (acting president), 1881-2; William L. Wilson, 1882-3; Robert C. Berkeley (chairman of the faculty), 1883-5; Eli Marsh Turner, 1885-93; Powell Benton Reynolds (acting president), 1893-5; James L. Goodnight, 1895-7; Jerome Hall Raymond, 1897-1901; Daniel Boardman Purinton, 1901-1911; Thomas Edward Hodges, 1911.

The powers and responsibilities of the president have been greatly increased within recent years. The administrative duties at first shared by the faculty or the local committee, and from 1899 to 1901 by twenty-three or more efficient but inharmonious committees, have been wisely and satisfactorily unified and placed under the control of the president. For a decade after December 1, 1901, he acted with the aid of a council of advisers, several standing committees, deans of colleges, heads of departments, a registrar, and a treasurer or bursar. In 1911, the powers previously exercised by the council were distributed partly to a smaller council of administration consisting of the president and the four deans representing the four colleges, and partly to the faculty acting as a legislative body.

As the college expanded from local and traditional conditions the strict rules and discipline of the earlier years became unnecessary, and a more efficient system of administration and co-operation was gradually developed. The strict curriculum of the earlier years and the loose separate-school elective system (the Virginia plan) which replaced it in June, 1882, have both given way to a partially elastic system in which, since 1895, the choice of studies by the student is under the oversight and direction of a "class officer," who

requires that prescribed courses shall be taken in order, and supervises the selection and arrangement of elective courses.

GROWTH

For many years the growth of the new institution was very slow and uncertain. This was due to many causes. Among these may be enumerated the partially local foundation, the sectional questions which had divided Virginia long before the war, the new sectional jealousies, the post-bellum political questions and partizanship, the lack of a satisfactory system of secondary schools, the divided responsibility and *laissez faire* policy, and the lack of means of communication with Morgantown. Gradually the power and importance of these causes were reduced by changing conditions. Industrial progress has been a prominent factor in the transformation of the earlier school into a real college.

The University has been greatly aided by the development of better secondary schools. The normal schools have partly solved the problem of suitable preparatory schools for the University. The preparatory school at Montgomery, opened January, 1897, was established by an act of February 16, 1895. Another school was established at Keyser by an act of 1901.

The most remarkable increase in the attendance of the University was coincident with the admission of women. In 1889 women were admitted to the collegiate department. In 1895-6 they were admitted to the college of law. In 1897 they were admitted to the preparatory school and to the schools of music and fine arts.

The phenomenal increase of attendance after 1895 was largely due to the work of the newly created office of field agent of the University and to the addition of new departments. It is instructive to trace how the five departments with which the University started in 1867 have increased to more than twenty-five by expansion and differentiation. The dates of the establishment of the special colleges and schools now comprised in the University are as follows: the college of law, 1878; the college of engineering, 1887; the agricultural experiment station, 1888; the college of agriculture, 1897; the school of music, 1897; the school of fine arts, 1897; the school of agriculture, 1911. A college of medicine was created in 1900, but it was reduced to a department in 1911.

BUILDINGS

The problem of securing suitable buildings to meet the needs of expansion has been a continuous one. The supply has never exceeded the demand.

Martin Hall was completed in 1870. The first armory building, now the south end of the Experiment Station, begun in 1873, was finished and occupied in 1874. On June 18, 1874, the corner stone of Woodburn Hall was laid on the site of the Woodburn Seminary building, which had burned in February, 1873. The central part was completed by June, 1876, and the upper floor was used as the commencement auditorium until 1890. As the appropriation was exhausted the two wings were not built at that time.

An addition to the Experiment Station was completed by 1889. In the latter part of the same year Commencement Hall was begun on the grounds purchased in June, 1887, and was completed in 1892.

A wing of the old Mechanical Building, which stood near the river, was ready by September, 1893, and an addition was finished in 1894. Science Hall was finished and equipped in the summer of 1893. In 1894 all the buildings of the University with their equipments had cost over $250,000, but they were not sufficient to meet the growing needs of the new University.

Early in 1898 work was begun on the north wing of Woodburn Hall. It was completed in 1900 and furnished a home for the music school, which had previously occupied rented rooms on Main street. In 1898 the regents purchased seven acres of the Fife land, on which were two small buildings. After the burning of the old Mechanical Building in 1899, Fife Cottage became the temporary home of the mechanical engineering work until the spring of 1902. The Astronomical Observatory was built near the close of 1900. The Armory, the construction of which had been urged as early as 1888, was finished by 1902. Mechanical Hall, designed in 1899 and begun in 1900, was also completed in 1902. The Library was finished in 1902 and opened in 1903. The President's House was built in 1905. The Central Heating Plant was completed in the early part of 1908. The south wing of Woodburn Hall was completed in 1911.

DESCRIPTION OF THE INSTITUTION

LOCATION

Morgantown, the seat of the University, is the county seat of Monongalia county. It is a beautiful town of twelve thousand inhabitants, located on the Monongahela river and the Baltimore and Ohio railroad, 103 miles east of Wheeling, and the same distance south of Pittsburg. It has modern conveniences of natural gas, water-works, electric lights, street railways, local and long distance telephones, and is noted for its healthful conditions, physical, social, and moral. There are churches of the following denominations in the town: Presbyterian, Methodist Episcopal, Methodist Protestant, Baptist, Protestant Episcopal, Lutheran, Christian, and Roman Catholic. There are no saloons.

Few institutions of learning have more attractive natural sites. The University grounds border the Monongahela river and afford a most picturesque outlook. The campus comprises about fifty acres. The University has also a farm of about one hundred acres for the use of the Agricultural Experiment Station and the College of Agriculture.

ORGANIZATION

The University organization embraces:—

The College of Arts and Sciences.
The College of Engineering and Mechanic Arts.
The College of Agriculture.
The West Virginia Agricultural Experiment Station.
The College of Law.

The following schools and divisions are connected with the University in their management and work but do not confer degrees:—

The School of Music.
The School of Fine Arts.
The Summer School.
The School of Agriculture and Home Economics.
The Division of Military Science and Tactics.
The Division of Agricultural Extension.

FUNDS

The funds for maintaining the University are derived from the following sources: (1) Interest on the land grant endowment of

$115,750; (2) the Morrill fund; (3) the Hatch fund; (4) the Adams fund; (5) biennial appropriations by the state legislature; (6) fees and tuition.

BUILDINGS

The buildings are as follows:—

1. Woodburn Hall, a three-story building, containing the administrative offices, lecture-rooms and the physiological and zoölogical laboratories. A portion of the third floor of this building is occupied by the University School of Music.

2. Martin Hall, a three-story building, containing lecture-rooms and society halls.

3. Science Hall, a four-story building, containing lecture-rooms, laboratories for the departments of physics, chemistry, and geology, and the museum of geology and paleontology.

4. Commencement Hall, a large two-story building, containing a commodious chapel, with 1,500 seats, and the gymnasium.

5. The Agricultural Building, a two-story building, containing the laboratories and offices of the Agricultural Experiment Station.

6. The Armory and Drill Hall, for the Department of Military Science.

7. Mechanical Hall, occupied by the College of Engineering and Mechanic Arts.

8. The Library, containing the general library, reading, and seminary rooms.

9. The President's House.

10. The Central Heating Plant.

11. The Men's Hall, or dormitory.

12. The Women's Hall, or dormitory, for women students.

13. The Fife Cottages, containing lecture-rooms and the anatomical and botanical laboratories.

Besides these there are the various buildings on the University Farm.

All of the buildings mentioned, except the Men's Hall, the Fife cottages, and the farm buildings are of brick and stone.

THE UNIVERSITY LIBRARY

The Library Building is a three-story stone structure, fireproof, 135 by 70 feet. The reading and reference rooms, occupying nearly the entire first floor, are well lighted, provided with modern library appliances, and are convenient to the book room in the rear of the main building. The book room is supplied with metal stacks which

hold 20,000 volumes. On the upper floors of the building are rooms for government documents and for class work.

The library contains about 33,000 volumes, including 5,500 government documents. Present appropriations provide for an annual increase of about 1,500 volumes. Two hundred and twenty periodicals are received, including publications of societies and scientific journals. Most of the county papers of the state are sent to the reading room.

A card catalogue, shelf list, and other bibliographic aids are provided and the librarians are ready at all times to give assistance in research and investigation.

There is a special library belonging to the College of Law, containing 5,000 volumes, located in Woodburn Hall; and the Willey Library, a valuable collection of about 1,500 volumes donated to the University by the heirs of the late Senator W. T. Willey, has been placed in the document room and opened to the public for reference use.

The library of the Agricultural Experiment Station, containing valuable sets of chemical journals and other technical material, in all about 5,000 volumes, may also be consulted by members of the University.

The various libraries connected with the University contain in the aggregate more than 43,000 volumes.

All officers and students and, under special restrictions, persons not connected with the University, have the privilege of drawing books from the library for home use, two volumes being allowed at one time. The corps of instruction have direct access to the shelves in the stack, and students may also have this privilege for special investigation upon recommendation of their instructors. The most important reference books, and books used in connection with the courses of instruction, numbering between 4,000 and 5,000, are kept on open shelves in the reference room.

The library is open from 8 a. m. to 10 p. m. every week day during the term, except Thanksgiving day, Christmas day, New Year's day, and the Fourth of July. On Sundays, the library is open, for readers from 2 to 5 p. m. During the Christmas and summer vacations, it is open on week days from 8 to 12 a. m.

LABORATORIES

The laboratories of the physical sciences are all grouped in Science Hall. The laboratories devoted to physics and elementary electrical engineering occupy the basement and first floor, the general chemical laboratories and lecture rooms the second floor, and the qualitative and quantitative laboratories a portion of the third

floor. The geological lecture room, laboratory, and museum occupy the remainder of the third floor.

On the basement floor of Woodburn Hall are placed the laboratories of the department of domestic science and of the departments of physiology and pathological anatomy. The zoölogical laboratory occupies the third floor of the south wing of the same building. The laboratories for work in botany and bacteriology and in anatomy are situated in the Fife cottages.

The experimental work in the departments of dairying and horticulture in the College of Agriculture is carried on for the present on the basement floor of Martin Hall. The Experiment Station contains a laboratory for work in plant pathology, two well equipped chemical laboratories and an entomological laboratory with its accompanying valuable collection of specimens. The greenhouses adjoining the Station are designed to afford facilities for experimental work.

The laboratories of the College of Engineering are all grouped in Mechanical Hall. They consist of the mechanical and steam laboratories connected with the power plant equipment, the electrical laboratory, the testing laboratory, the hydraulic laboratory, the wood-working shop, the machine shop, the sheet-metal and pipe-fitting shop, the forge shop, and the foundry. In addition to these there are two large, well lighted and well equipped drawing rooms, and a blue printing room.

MILITARY TRAINING

Military training is prescribed for all regular students in the University below the rank of Junior unless such students are more than twenty-three years of age upon their entrance to the University. Certain exceptions to this requirement are stated in full on page 195 in connection with the detailed announcement of the division of military science.

Students who secure appointments as state cadets (see announcements of Division of Military Science) are exempt from the payment of tuition or matriculation fees and are at no expense for uniform or for use of text books. Enrollment in the Division of Military Science or appointment as a state cadet does not render the student liable for military service either to the State or to the United States government.

PHYSICAL TRAINING

Gymnasium

For the physical training of students excellent opportunities are offered by the gymnasium. It is furnished with a complete

anthropometric equipment, baths, dressing room, lockers, and all kinds of apparatus usually found in modern gymnasiums. In all the work the aim is to develop health, strength and vitality, and such special exercises are prescribed as may be necessary to symmetrical development.

Athletics

The department of athletics, as now organized, is under the supervision of a director, who is assisted by a coach. Football, base-ball, basket-ball, track and tennis teams are organized and trained each season. Two field days are held annually, one in the fall and one in the spring. Indoor meets are held during the winter term for the class championship. The athletic field is provided with a grand-stand, which adds greatly to the enjoyment and profit of athletic sports. All field sports are under the control of the athletic board of control which is made up of the faculty committee on athletics and five representatives of the student body, chosen from the various classes of the University. The University is a member of the Intercollegiate Athletic Association of Western Pennsylvania and West Virginia and of The National Collegiate Athletic Association.

Physical Training for Women

All women students in the University with the exceptions hereinafter named are required to register for work in physical training. Instruction is given three hours a week during the school year and a credit of one semester hour is given for each semester's work satisfactorily completed. The following students are exempt from this requirement: (1) All students classified as juniors or seniors; (2) all students whose work is entirely in the School of Music or the School of Fine Arts; (3) all students who are taking work only in the short courses in the College or School of Agriculture or in Home Economies.

The gymnasium for women is located in the basement story of Woodburn Hall. It is provided with dressing room, baths, and new and adequate equipment.

UNIVERSITY FEES AND EXPENSES

In the College of Arts and Sciences and in the College of Agriculture tuition is free to West Virginia students. For students not residents of West Virginia the tuition fees are $30.00 per semester, or $50.00 per year.

In the College of Engineering the tuition fees are $12.00 per

semester, or $20.00 per year, for resident students, and $30.00 per semester, or $50.00 per year, for non-resident students.

In the College of Law the tuition fees are $15.00 per semester, or $25.00 per year, for resident students, and $30.00 per semester, or $50.00 per year, for non-resident students.

The matriculation fee is $5.00, payable upon entering the University by all students except cadets and those whose work is exclusively in music or art.

The contingent fee is $3.00 per semester, payable by all students except cadets.

The athletic fee is $2.50 per semester, payable by all students.

A fee of $2.00 each semester is charged for registration and the issuance of class cards. This fee is remitted to all students who procure class cards during the first two days of the first semester. and the first day of the second semester. It is exacted in all other cases. Students whose work is exclusively in music or art, or in both, are excused from payment of the $2.00 registration fee.

Class officers will issue class cards only on presentation of the receipt for the above fees, signed by the registrar and bursar.

The diploma fee is $5.00, payable by all students at the beginning of the semester in which they expect to receive their degree or diploma.

A fee of $1.00 is charged for furnishing a copy of a student's record in the registrar's office after the regular semester reports have been issued.

Students in laboratory courses pay special fees to cover the cost of materials used.

BOARD AND LODGING

Board and lodging together may be obtained in Morgantown for $3.25 per week. Most students, however, pay from $3.75 to $4.50 per week. Furnished rooms may be obtained in private families at from $1.00 to $1.25 per week. Board in students' clubs costs from $2.50 to $3.00 per week; in private families, from $3.00 to $4.00. The minimum rates here stated are those obtainable at the Men's Hall.

ESTIMATED EXPENSES FOR A YEAR OF NINE MONTHS

Room rent	$ 27.00 to	$ 45.00
Board	90.00 to	120.00
Laundry	9.00 to	13.00
Text-books	8.00 to	30.00
Contingent and athletic fees	6.00 to	11.00
	$140.00	$219.00

To this estimate must be added matriculation, tuition, diploma, and laboratory fees, in the case of students who are required to pay them, traveling expenses, clothing, and miscellaneous expenses, which depend largely upon the tastes and habits of individual students.

Text-books are kept for sale in the University book store.

State cadets are furnished their text-books, stationery, and uniforms free and are exempt from the payment of matriculation, contingent, and tuition fees.

ACCREDITED AND RECOGNIZED PREPARATORY SCHOOLS

The University is a part of the public school system of the state and desires that its relations with the other parts of the system be as close and intimate as possible. The committee on classification and grades has full charge of all matters pertaining to accredited and recognized schools. School superintendents, principals, or boards, desiring to have their schools placed on the accredited or recognized list, should make application to Professor J. N. Deahl, sub-committee on accredited and recognized schools.

Diplomas or certificates of a general nature will not be accepted, but certificates setting forth the work of the student in detail will be required in every case. The University provides a special form for this certificate, copies of which may be obtained at any time upon application to the President of the University or the chairman of the committee on classification and grades. A supply should be kept on hand by the principal of each accredited or recognized school.

ACCREDITED PREPARATORY SCHOOLS

Accredited schools are those which offer a sufficient amount of work to admit their students to the freshman class in the College of Arts and Sciences*. Eligibility to the list of accredited schools depends on the quantity and quality of the work done. The following provisions concerning the quality of the instruction must be complied with:

1. The scholastic attainments of teachers in accredited schools must be equivalent to that of a graduate of a standard college and

*As the requirements for admission to the College of Engineering are all prescribed, it is possible that a graduate of an accredited school may not have some of the prescribed work, and so not be able to enter the freshman class in that college.

should include professional preparation and some special training in the subjects they teach.

2. The number of daily periods of class room instruction given by any one teacher should not exceed five.

3. The faculty should consist of not fewer than three teachers exclusive of the superintendent of schools, except in cases where the number of students does not exceed thirty or forty.

4. Laboratory and library facilities must be adequate to meet the needs of instruction.

The list of accredited schools is as follows:

Alderson Academy.....Alderson, W. Va.
Allegheny County Academy.....Cumberland, Md.
Allegheny Collegiate Institute .....Alderson, W. Va.
Bluefield High School.....Bluefield, W. Va.
Broaddus Classical and Scientific Institute.....Philippi, W. Va.
Charleston High School.....Charleston, W. Va.
Clarksburg High School.....Clarksburg, W. Va.
Clay District High School.....Shinnston, W. Va.
Connellsville High School.....Connellsville, Pa.
Elkins High School.....Elkins, W. Va.
Fairmont High School.....Fairmont, W. Va.
Grafton High School.....Grafton, W. Va.
Hinton High School.....Hinton, W. Va.
Huntington High School.....Huntington, W. Va.
Keyser High School.....Keyser, W. Va.
Linsly Institute.....Wheeling, W. Va.
Mannington High School.....Mannington, W. Va.
Martinsburg High School.....Martinsburg, W. Va.
Morgantown High School.....Morgantown, W. Va.
Morris Harvey College.....Barboursville, W. Va.
Moundsville High School.....Moundsville, W. Va.
New Martinsville High School.....New Martinsville, W. Va.
Parkersburg High School.....Parkersburg, W. Va.
Pittsburg Central High School.....Pittsburg, Pa.
Ronceverte High School.....Ronceverte, W. Va.
Salem College.....Salem, W. Va.
Scottdale High School.....Scottdale, Pa.
Sistersville High School.....Sistersville, W. Va.
State Normal School.....Athens, W. Va.
State Normal School.....Fairmont, W. Va.
State Normal School.....Glenville, W. Va.
State Normal School.....Huntington, W. Va.
State Normal School.....Shepherdstown, W. Va.

State Normal School.....West Liberty, W. Va.
Southwestern State Normal School.....California, Pa.
Tyler County High School.....Middlebourne, W. Va.
Uniontown High School.....Uniontown, Pa.
Wheeling High School.....Wheeling, W. Va.

RECOGNIZED PREPARATORY SCHOOLS

Recognized preparatory schools are those whose graduates have not had a sufficient number of credits to admit them to the freshmen class, but receive credit toward admission for the work certified.

Belington High School.....Belington, W. Va.
Benwood High School.....Benwood, W. Va.
Bramwell High School.....Bramwell, W. Va.
Bridgeport High School.....Bridgeport, W. Va.
Buckhannon High School.....Buckhannon, W. Va.
Cameron High School.....Cameron, W. Va.
Charles Town High School.....Charles Town, W. Va.
Ceredo High School.....Ceredo, W. Va.
Chester High School.....Chester, W. Va.
Claysville High School.....Claysville, Pa.
Davis High School.....Davis, W. Va.
Fairfax High School.....Thomas, W. Va.
Fayetteville District High School.....Oak Hill, W. Va.
Harrisville High School.....Harrisville, W. Va.
Kingwood High School.....Kingwood, W. Va.
McMechen High School.....McMechen, W. Va.
Mt. Wesley High School.....Berkeley Springs, W. Va.
New Cumberland High School.....New Cumberland, W. Va.
Pennsboro High School.....Pennsboro, W. Va.
Perryopolis High School.....Perryopolis, Pa.
Piedmont High School.....Piedmont, W. Va.
Point Pleasant High School.....Point Pleasant, W. Va.
Ravenswood High School.....Ravenswood, W. Va.
Richwood District High School.....Richwood, W. Va.
Salem High School.....Salem, W. Va.
St. Marys High School.....St. Marys, W. Va.
Spencer District High School.....Spencer, W. Va.
Sutton High School.....Sutton, W. Va.
Terra Alta High School.....Terra Alta, W. Va.
Weston High School.....Weston, W. Va.
Williams District High School.....Williamstown, W. Va.

ADMISSION TO THE UNIVERSITY

METHODS OF ADMISSION

Students are admitted to the University either by examination or on certificate from an accredited preparatory school. In the latter case the certificate must set forth the work of the student in detail. Diplomas or certificates of a general nature will not be accepted.

Candidates for admission to the University must present certificates of good moral character and, if from other colleges or universities, must present letters of honorable dismissal.

Candidates for admission who come from other institutions of learning without letters of honorable dismissal may, at the discretion of the registrar, be allowed to register provisionally. In every such case, the registrar will himself make immediate inquiry of the institution from which the applicant comes concerning his standing as a student in that institution. If a certificate of honorable dismissal cannot be obtained, the registration will be cancelled and all fees paid by the applicant will be returned.

The course of procedure above described will be followed also in cases of students from accredited schools, who offer themselves for matriculation without the regular certificate as prescribed above.

ENTRANCE CREDITS

The requirements for admission to the various colleges of the University are stated in terms of units.

A unit in any subject represents the amount of work that may be done in a standard high school in a year of thirty-six weeks, with five recitation periods of forty-five minutes each, per week. In courses where laboratory work is required, from two to three hours of laboratory work is considered the equivalent of one hour recitation according to the amount of outside preparation required in connection with such work.

Certificates of entrance credits must be on the blank form prescribed by the committee on classification and grades, or on a similar form, so that credit values, in units, may be readily computed.

The chairman of the committee, or any member acting in his stead, may list and certify the credits of any applicant for admission to the University when such credits are from an accredited school and in proper form, and are of sufficient value in units to entitle the applicant to classification as a freshman, or first year classman. Certificates from schools not on the accredited list must be approved by the committee.

MATRICULATION AND REGISTRATION

In order to gain admission to the University, the student must first report at the registrar's office in Woodburn Hall. A blank will be furnished, which, on being signed, will be presented to the registrar. That officer will then assign the student to a class officer, and will certify to the bursar the fees, if any, which are to be paid. On the payment of these fees, the student will be assigned to the proper classes by his class officer. No student is permitted to become a member of any class until his registration is completed.

All students are required to register at the beginning of each semester.

SPECIAL STUDENTS

Persons who do not desire to become candidates for a degree, may be admitted as special students, subject to the following provisions:

1. Special students must as a rule be twenty years of age or over. Only in exceptional cases will permission be given to applicants under that age.

2. Special students must satisfy at least nine units of the requirements for admission, including two units of English.

3. Every application for admission as a special student must be in writing, and must set forth fully the applicant's reasons, together with a detailed statement of the studies he desires to pursue.

4. Special students are subjected in all respects to the usual rules relating to registration and scholarship. They may be assigned to classes for which they apply, it being understood, however, that admission to any class rests entirely with the instructor in charge, and further, that admission to any class when so granted does not necessarily imply credit for prerequisites.

5. Special students shall not have their work certified for credit to any other institution, but a general statement of work done may be given if applied for; in every case, this statement shall show that the work was done under registration as a special student, and in case the full requirements for admission to the University have not been satisfied, the statement shall set forth that fact.

CONDITIONAL ADMISSION

Persons who lack not more than one unit of the regular entrance requirements of any college in the University may register as conditioned freshmen or first year men in that college.

Persons who lack not more than four units of the regular entrance

requirements of any college are permitted to enter certain courses offered in the University for the purpose of securing the credits which are deficient. The courses available under this provision are some elementary college courses in language, history, and science, which may be offered either for entrance or college credit, and also courses A and B in English and course 1 in algebra (Mathematics 1). For each of the last three courses named a half unit entrance credit will be given. Students who are allowed to enter with deficient credits will be subject to rules similar to rules 4 and 5 given above for special students.

ADVANCED STANDING

1. All applications for advanced standing in college work must be made to the committee on classification and grades not later than two weeks after the applicant's registration. When certificates of work done elsewhere are offered, the committee will consider them, and, if they are adjudged sufficient, the credits they call for will be certified to the registrar by the chairman of the committee. If no certificates are offered, or those offered are not considered sufficient for the credits asked, the applicant will be sent by the committee to the heads of the departments in which credit is sought, who will report, after examination, to the committee, on the form furnished, the numbers, names, and values of the courses, if any, for which the applicant is entitled to credit. The applicant shall, at the discretion of the committee, have the privilege of presenting his certificates to the heads of the departments, who may give them such recognition in connection with the examination as they see proper. When the credit to be given, if any, has been determined, it shall be reported by the head of the department to the chairman of the committee, on the form provided, always under seal, and in no case must information of such credit be given to the applicant before the report has been sent to the committee. Before credits in this way are certified to the registrar, all certificates must be returned to the chairman of the committee, and by him placed on file.

SCOPE OF THE ENTRANCE REQUIREMENTS

The following description indicates the extent of preparation expected in each of the several subjects offered for entrance credit for admission to the various colleges of the University.

ENGLISH

Grammar and Elementary English.—No student will receive entrance credit in English whose work shows marked deficiency in spelling, punctuation, grammar, sentence structure, or paragraphing. The student should be prepared to state intelligibly the essential principles of English grammar and to explain the syntactical structure of any sentence encountered in his reading. An elementary text-book on grammar should have been completed before the student enters upon his high school course. For more advanced study of the subject and for practical review the material presented in the ordinary high school text-books on rhetoric may be utilized. The subject should be constantly reviewed in connection with the work in composition during the four years of the high school course.

Rhetoric and Composition.—Systematic practice in theme writing and other forms of oral and written composition with instruction in the principles of rhetoric and the forms of discourse must form an important part of each unit of English. At least one theme weekly should be required throughout the course. Students who are not able to express themselves in clear, correct, and idiomatic English will not be given full credit. The subjects upon which the student writes should not be drawn exclusively from literature. A considerable portion of them should be so distributed as to give proper training in the various forms of discourse.

The three units in English should include the following:

(a) One unit. English Classics and English Composition. The thorough study of at least five English classics selected from the list below. The simplest narrative classics, both prose and poetry, should be selected. The aim of the work should be to stimulate interest in good literature and to enable the student to form vivid mental pictures and to understand fully the thought expressed. The aim of the composition work should be to secure facility and accuracy. The work should include letter writing, short themes in narration and description, and study of paragraphing, and sentence structure.*

*Reading of good literature outside of class and memorizing of notable passages in prose and verse should be required, but outside reading accompanied by written reports or reviews made according to a stereotyped model, in place of a thorough study of assigned lessons, class instruction and discussion will not be considered as satisfactorily fulfilling the requirement of any unit.

(b) One unit. English Classics and English Composition. Thorough study of five other English Classics. The work should include more complex forms of fiction and narrative poetry, simpler essays, and at least one of Shakespeare's plays. The aim should be to make a study of the form, structure, style, and purpose of the selection; the author's life; relation of the selection to its age and to other works of similar type. The work in composition should include themes of moderate length in all the forms of discourse; study of unity, coherence, and emphasis in sentences and paragraphs; kinds of sentences; diction; figures of speech.

(c) One unit. Advanced study of Classics; Rhetoric. A thorough and intensive study of the form, structure, and style, of at least one typical example of the novel, the drama, the lyric or epic poem, and the essay. A study of the principles of rhetoric, employing some good advanced high school text-book, with frequent and systematic theme writing must form a part of this unit.

The following list of classics is suggested for reading and study:

For the first unit: Longfellow's Evangeline and Courtship of Miles Standish; Whittier's Snow Bound; Lowell's Vision of Sir Launfal; Coleridge's Rime of the Ancient Mariner; Macaulay's Lays of Ancient Rome; Goldsmith's Deserted Village; Irving's Sketch Book; Hawthorne's Twice Told Tales; Franklin's Autobiography; Aldrich's Story of a Bad Boy; Warner's Being a Boy, A Hunting of the Deer, etc.; Burrough's Sharp Eyes, Birds and Bees, etc.; Dickens' Christmas Carol; Stephenson's Treasure Island.

For the second unit: The Bible; Scott's Lady of the Lake, Marmion, Ivanhoe, Quentin Durward; George Eliot's Silas Marner; Goldsmith's Vicar of Wakefield; Mrs. Gaskell's Cranford; Cooper's Last of the Mohicans; Blackmore's Lorna Doone; Dickens' Tale of Two Cities, David Copperfield; Arnold's Sohrab and Rustum; Byron's Mazeppa and the Prisoner of Chillon; Shakespeare's Merchant of Venice, As You Like It, Julius Ceasar, Twelfth Night; Addison's De Coverly Papers; Thoreau's Succession of Forest Trees; Stevenson's Inland Voyage.

For the third unit: Novels: Thackeray's Henry Esmond; George Eliot's Silas Marner or Romola; Jane Austen's Pride and Prejudice; Hawthorne's House of Seven Gables. Dramas: Shakespeare's Macbeth, Lear, or Henry V. Poems: Tennyson's Idylls of the King; Milton's Shorter Poems; Browning's Selected Poems; Palgrave's Golden Treasury. Essays: Lamb's Essays of Elia; Emerson's Essays; Rushkin's Sesame and Lilies; Carlyle's Heroes and Hero Worship, Essay on Burns; Macaulay's Essay on Addison and Life of Johnson; Washington's Farewell Address; Webster's Bunker Hill Oration; Lincoln's Gettysburg Speech, etc.

LATIN

(a) One unit—Such knowledge of inflection and syntax as is given in any good preparatory Latin book, together with the ability to read easy selections from Cæsar.

(b) One unit—Four books of Cæsar's Gallic War, or its equivalent in Latin of equal difficulty. The ability to write simple Latin based on the text.

(c) One unit—Six orations of Cicero. The ability to write simple

Latin based on the text. The simpler historical references and the fundamental facts of Latin syntax.

(d) One unit—Six books of Virgil, with history and mythology. Scansion of hexameter verse. Two of the three prescribed units to be offered must be (a) and (b). Either (c) or (d) may be offered for the third unit, but one year of composition must be included.

GREEK

(a) One unit—Introductory lessons, elements of grammar; easy translations from the Anabasis; translations into Greek of easy continuous prose based upon the Anabasis.

(b) One unit—Xenophon—the first four books of the Anabasis.

(c) One unit—Homer—The first three books of the Iliad (omitting II-494 to end) and the Homeric constructions, forms, and prosody; constant practice in sight translation and prose composition.

GERMAN

(a) One unit—A thorough knowledge of elementary syntax; constant drill in pronunciation, oral translation, and composition; translation of seventy-five to one hundred pages; advanced syntax; composition throughout the year.

(b) One unit—Modern prose and familiar poems, two hundred pages; advanced syntax; intermediate composition throughout the year.

(c) One unit—Advanced prose, four hundred pages; advanced composition throughout the year.

FRENCH

(a) One unit—(1) The essential principles of French etymology and syntax, and, especially, a thorough knowledge of the pronoun and of the regular and irregular verb; (2) ability to write in French, sentences of moderate difficulty; (3) the reading of from one hundred and fifty to two hundred pages of modern French prose; (4) ability to pronounce the language correctly and with some fluency.

(b) One unit—(1) Continued systematic study of French grammar, including syntax; (2) the reading of from three to four hundred pages of modern French; (3) the practice in writing from diction.

(c) One unit—(1) Twenty pages of advanced prose composition; (2) at least three hundred pages of modern French prose; (3) at least three hundred pages of modern French plays.

HISTORY

From one to three units may be offered, selected from the following:

(a) Ancient History to 800 A. D.—one unit.

(b) Mediæval and Modern European History—one-half to one unit. The amount of credit will depend upon the time given to the subject.

(c) English History—one-half to one unit. The amount of credit will depend upon the time given.

(d) American History, or American History and Civics—one unit.

The student should be familiar with the important events of the period of history which he offers for credit, and should have a clear knowledge of the general development.

A whole year that covers the whole field of general history with a good text-book and with notes on collateral reading and preparation of maps will be accepted as one unit, although it is believed that better results will be obtained by spending a whole year on ancient history and another year on the mediæval and modern period.

American history and civics should be preceded by English history, and should not be given before the third year in the high school course, in case three years are given to history. Ancient history should be followed by English history in case mediæval and modern history are not given.

The study of civics must not precede the study of American history; and, if studied as a separate branch following the course in American history, some advanced text such as Forman's Advanced Civics should be used. An outline knowledge of elementary civics, such as is presented in Forman's First Lessons in Civics, or in Peterman's Civics, is presupposed.

MATHEMATICS

(a) Algebra through quadratics—one unit. The four fundamental operations for rational algebraic expression; factoring, highest common factor, lowest common multiple, complex fractions, solution of equations of the first degree, radicals including the extraction of the square root of polynominals and numbers, fractional and negative exponents, quadratic equations, and equations containing one or more quadratic equations, and problems involving the use of such equations.

(b) Plane geometry—one unit. The completion of any standard text with original exercises and problems.

(c) Algebra—one-half unit. Review of essentials followed by ratio and proportion, the binominal therorem for positive and integral exponents, arithmetical and geometrical progressions.

(d) Solid geometry—one-half unit. Properties of straight lines and planes, dihedral and polyhedral angles, projections, polyhedrons, including prisms, pyramids, and the regular solids, cylinders, cones, and spheres, spherical triangles, measurements of surfaces and solids.

(e) Plane trigonometry—one-half unit. Definitions and relations of the six trigonometrical functions as ratios, proofs of important formulae, theory of logarithms and use of tables, solution of right and oblique plane triangles.

SCIENCE

(a) Physics—one unit. Credit will be given for one year's work with any standard text book, upon the presentation of a satisfactory note book, covering at least thirty-two experiments. The note book should contain the student's own record of his laboratory experiments and a signed statement from his teacher that the book is the original record of the student's observations. Students deficient in laboratory work may make up this deficiency in the University.

(b) Chemistry—one unit. Credit will be allowed for the completion in a satisfactory manner of any standard elementary text in inorganic chemistry, accompanied by individual laboratory work. A full year should be given to the work.

(c) Botany—one unit.

(d) Zoölogy—one unit.

Work in either botany or zoölogy, to be credited, must have been accompanied by individual laboratory work. The exact extent of the work which should be done cannot be stated here, but, for the maximum credit, it should be as much as a competent teacher, trained in laboratory methods, can accomplish in from one, to one and one-half years. In estimating the time employed, two hours of laboratory work will be counted as the equivalent of one recitation period. It will be necessary for applicants to present their laboratory notes and drawings.

In botany the class should cover the ground of Coulter's "A Text-Book in Botany," or Bergen's "Foundation of Botany," or their equivalent.

In zoölogy the class work should cover about what is represented in Kellogg's "Elementary Zoölogy" (Henry Holt), or in Parker and Haskell's Zoölogy, one-volume edition (Macmillan & Co.). The amount of laboratory work that should be done is somewhat less than is outlined in Scheffer's manual (Blakiston).

(e) Physical Geography—one-half unit.

(f) Physiology—one-half unit.

Credit for one-half unit each in physical geography and physiology will be allowed—as elective only—if taught in a scientific

manner in an accredited or recognized secondary school. The use of a standard text should be supplemented by proper illustrative methods and proper observation. One-half year must be given to each subject.

DRAWING

One unit. To receive entrance credit in free hand drawing, instruction should have been designed to give the student an intelligent and accurate conception of form, light, and shade, and the ability to express simply and directly, such objects as natural and geometrical form, still life, architectural details, and casts from nature, the antique, and life.

The training of the eye to observe with understanding, rather than the teaching of any particular method of expression, should be the aim of the instructor. No mechanical aids should be employed. The pencil is recommended as the simplest and most convenient medium for elementary work. It is desirable that students seeking credit for drawing shall submit their work in addition to their general certificate.

AGRICULTURE

One-half to one unit—A study of soils, plants, grasses, cereals, insects, farm animals, feeding, gardening, etc. The experimental and demonstration work should be equivalent to one full year of laboratory work. Standard texts for class work and for laboratory guides should be used.

RULES GOVERNING CLASSIFICATION AND SCHOLARSHIP

THE CLASS OFFICER

The duties of the class officer are as follows:

1. To assign the student to proper courses, and see that prescribed work is taken in order.

2. To supervise the selection of elective courses by the student.

3. To keep a record of the work done by the student and to recommend him for his degree or diploma when the work is completed.

4. To have general oversight of the student's college life. The student will look to his class officer for advice and guidance in all

matters pertaining to his work. Withdrawal from classes, changing from one class to another, etc., will always require the class officer's consent.

CREDITS

1. A credit or semester-hour represents the amount of work done in one semester (eighteen weeks), in one recitation hour with two preparation hours a week. From two to three hours of laboratory work is considered equivalent to an hour of recitation, according to the amount of outside work assigned in connection with the laboratory hours.

2. The minimum number of hours for which a student may register in any semester is fourteen in the College of Arts and Sciences, fifteen in all other colleges and schools.

3. No course for which a credit has already been given shall be counted toward the minimum number of credits prescribed for a semester's work in any college, unless by special permission of the committee on classification and grades.

4. The committee will consider the question of granting permission to any student to take more than the maximum amount of work permitted as a semester's work in any college only on the presentation of a petition approved and signed by the class officer, and accompanied by a statement of the student's record for the preceding quarter. Such petition must be presented within seven days after the day set in the catalogue for the opening of the quarter.

5. Fewer than ten hours in an ancient or a modern language will not be counted toward any University degree, diploma, or certificate.

CLASSIFICATION

1. No student shall be classified as a freshman or first year student who is conditioned in more than one unit of entrance requirements.

2. No student shall be classified as a sophomore or second year student until all preparatory conditions are removed, and credit for twenty-eight hours of prescribed freshman work, or for twenty-eight hours including the prescribed work, are obtained.

3. No student shall be classified as a junior or third year student until he has received credit for at least fifty-six hours.

4. No student shall be classified as a senior or four year student until he has received credit for as least ninety hours.

5. Classification of students for publication in the catalogue shall be made on the basis of the work to their credit on November 1 of each year, except in the case of students entering later in the year.

CLASS STANDING AND EXAMINATIONS

1. System of Grading.—Students are graded on a scale in which one hundred per cent. is regarded as perfect and seventy per cent. as a passing grade.

2. Absences.—Punctuality in attendance and attention to the work of the classroom will be given much consideration in determining the class standing of the student. Every unexcused absence will effect a reduction of one per cent. in the student's final grade for the course. All excuses for absence except as noted in the paragraph following, should be made to the registrar.

In case of absences at the beginning of either semester a deduction of two per cent. from the final grade in every subject shall be made for each exercise missed, for all absences not more than seven in number, unless such absences are excused by the committee. If the absences are more than seven in number, full credit for the course will not be given, unless such absences are excused by the committee and the work missed made up to the satisfaction of the instructor. Excuses for such absences must be presented to the committee on special blanks furnished for that purpose.

3. Withdrawal from a Class.—The permission of both class officer and instructor shall in all cases be necessary for the withdrawal of a student from any class or for his transfer from one class to another. After the first six weeks of the semester have elapsed the permission of the committee on classification and grades must also be obtained. If a student discontinues a course without permission his standing in that course shall be reported to the registrar as zero.

4. Mid-semester Reports.—On the second Friday after Thanksgiving Day and on the first Friday in April each instructor is required to made a mid-semester report of the standing of all students in his classes. The standing of the student as it appears in this report is based on the daily recitation grades and on a special test given during one or more of the regular recitation periods. These reports will be made to the various class officers and by them forwarded to the registrar not later than the following Monday. Any student whose average standing in all studies as shown by the mid-semester report is less than fifty per cent. will be suspended from the University for the remainder of the semester.

5. Examinations and Final Grades.—In practically all the courses offered in the University a written examination is required at the end of the semester. Both the class standing and the examination grade of the student are considered in making up the final grade. These

final grades must in all cases be reported at the end of the semester and not held over by the instructor to a later time or reported as incomplete. Reports of final grades are to be made on the class cards presented by the students at their entrance to the course and are to be sent to the various class officers, who will report them in turn to the registrar.

6. Absence from Examination.—If the student attends the course throughout the semester and is absent from examination, without permission, the instructor shall count the examination as zero, and report the final grade as one-half the recitation grade. If the student is unavoidably absent from examination, and has a recitation grade of eighty-five or over, the instructor may report the recitation grade as the final grade in the subject. If the recitation grade is under eighty-five, and the absence from examination is for reasons satisfactory to the instructor, the fact will be recorded on the card returned to the class officer, and the student shall have the privilege of taking the examination at a later time.

7. Conditions and Failures.—If the final grade of any student for any course is below sixty, it shall be recorded as a "failure," and the student must take the course again if he desires credit for it. If the final grade is sixty, or over, but below seventy, it shall be recorded as a "condition,' and the student shall have the privilege of a second examination, which must be taken at the time designated by the instructor, and applied for not later than ten days after the opening of the succeeding semester. A condition not removed within the semester following the one in which it was imposed becomes a failure. If the final grade after a second examination is again below seventy, it shall be recorded as a "failure."

8. Suspensions.—Any student whose standing in two or more courses is less than sixty per cent., or who fails to make the average standing of sixty per cent. in all of his courses for any semester, shall be suspended from the University for the succeeding semester. If, however, the failure as above is due to the abandonment of any class, or withdrawal from the University without permission, or to absence from examination without reasonable excuse, the suspension shall be indefinite. If a student suspended for any semester by the operation of this rule reënters the University and again becomes subject to it, his suspension shall be indefinite.

The committee on classification and grades will relieve any student from the operation of this rule for satisfactory reasons. The student asking for relief must, when possible, appear before the committee in person; a statement from the student's class officer and instructors concerned will also be required.

9. Reports.—A report of each student's work is made at the close of each semester, either to the student himself or to his parent or guardian. A complete record is also kept in the registrar's office. The fee for making a copy of this record after the semester reports have been sent out is one dollar.

In cases where a student's work is unsatisfactory as shown by the mid-semester test a mid-semester report will also be made both to the parent or guardian and to the student.

WORK DONE OUT OF RESIDENCE

Work done out of residence is discouraged. In case of courses begun at the University and not completed by reason of illness or otherwise, however, permission to complete the work in absentia under direction of the regular University instructors may be granted by the Committee on Classification and Grades; but in such cases credit shall be given only upon report of a grade of not less than eighty per cent. on final examination.

DEGREES

All University degrees are conferred by the State Board of Regents upon recommendation of the University faculty. Degrees are granted only once in each year, at the annual University commencement. No degree will be conferred upon a candidate who has not done at least the last thirty hours of his work while in actual residence at the University.

WITHDRAWAL FROM THE UNIVERSITY

A student desiring to withdraw from the University must apply to the President for permission. When the withdrawal permit has been secured it must be presented by the student to his class officer who will forward it to the registrar. Students who withdraw from the University without permission will have their grades reported as zero at the end of semester and will then be liable to indefinite suspension as stated in Rule 8 above.

GENERAL INFORMATION

DISCIPLINE

The rules and regulations which students are required to observe are few, simple, and reasonable:—civil and orderly conduct; punctuality and regularity in attendance upon all required exercises; reasonable diligence in the performance of the work prescribed, and abstinence from drinking, gambling and like gross vices.

Students who do not comply with these requirements will not be allowed to remain in the University.

All matters of discipline are in charge of the President of the University in consultation with the dean of the college or head of the division of the University in which the student concerned is enrolled.

THE CONVOCATION

The University Convocation is held weekly on Wednesday morning at ten o'clock in Commencement Hall. No classes or other University exercises are held at this hour and opportunity is afforded for all members of the University, both instructors and students, to attend the weekly meeting. The hour is occupied by lectures and addresses, discussion of student interests and problems, and the consideration of questions relating to the general University welfare.

In connection with the weekly convocation brief devotional exercises are usually held under the direction of the Chaplain of the University. The singing at these exercises is in charge of the Director of the School of Music. Attendance is entirely voluntary.

CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association is organized for the purpose of cultivating the best social and spiritual atmosphere in the University, and training the students in lines of practical service. Regular meetings are held every Friday evening, in the Association Room in Woodburn Hall. All men in the University are eligible to membership in the Association.

The administrative policy of the Association is directed by an advisory board, composed of members of the faculty, business men of the town, alumni and students. A general secretary is employed, who gives his full time to the work. The Y. M. C. A. Office is in Room 1, Martin Hall. Mr. C. E. Hilborn is the present secretary.

Membership in the Young Women's Christian Association is open to all young women of the University. Regular devotional meetings are held every Friday at 6:30 p. m. in the Women's Parlor in Woodburn Hall.

Systematic courses in Bible Study are offered, both for men and for women, which cover the four years of college life. The classes are small in size, informal in character, and give opportunity for friendly, informal discussions of religious problems and personal convictions. Special courses are also offered in the study of Christian Missions. Delegates are sent each year from each association to the State and International Student Conventions.

PHI BETA KAPPA

The Alpha of West Virginia Chapter of the Phi Beta Kappa Society is established at the University. Stated meetings or public exercises of the Society are held twice annually; the Anniversary meeting on December 10, and the Annual meeting during Commencement Week. The honor of membership may be conferred upon candidates for the degree of Bachelor of Arts who have maintained a high scholarship rank during their college course; also upon members of the faculty and instructional staff of the University and upon alumni of any college in the University. The president of the chapter for the year 1912 is Professor J. M. Callahan; the secretary, Professor D. D. Johnson.

OTHER SOCIETIES

1. The Columbian Literary Society. Regular meetings every Friday night in its own hall in Martin Hall. Membership open to all students of the University.

2. The Parthenon Literary Society. Regular meetings every Friday night in its own hall in Martin Hall. Membership open to all students of the University.

3. The University Dramatic Club. The purpose of this organization is to stimulate an interest in literary and dramatic work in the University. This it accomplishes through the practical and systematic study of standard plays, and through the public presentation of at least two plays in each college year. All University students are eligible to membership in the Dramatic Club, but those desiring to enter must pass a series of tests under the direction of the professor of elocution and oratory.

4. The Choral Society. Regular meetings every Monday at 7:30 p. m. in Commencement Hall. Membership open to all students in the School of Music and all others interested.

5. The Athletic Association. Organized for the purpose of encouraging and developing the athletic interests of the University. Incorporated under the laws of West Virginia. Membership open to all students of the University.

6. The Students' Publishing Association. Organized for the purpose of publishing the college papers. At present there are published the Athenæum, a weekly newspaper, and the Monongalian, a quarterly literary magazine.

7. The Engineering Society. Regular meetings the first and third Friday nights of each month in its room in Engineering Hall. Membership open to all students in the College of Engineering and Mechanic Arts.

8. The University Grange, Number 373, Patrons of Husbandry. Regular meetings every Tuesday night. Membership open to all students in the College of Agriculture and to others who may be elected.

9. The English Club. Regular meetings on the first Thursday night of every month.

10. The Beowulf Gedriht. Regular meeting in October, November, February, April and May. Open to all members of the University upon the fulfillment of certain scholarship qualifications.

11. The Woman's League. An organization of all the woman students of the University for the purpose of maintaining the general welfare and special interests of such students. The league is controlled by a governing board containing both faculty and student members. Social meetings are held once each quarter.

The Fraternities of the University hold their meetings Tuesday night of each week at 6:30 o'clock.

PRIZES

All contestants in any of the contests in oratory, declamation, or debate, must have received credit for at least three hours in elocution.

No composition, in whole or in part, shall be submitted in competition for two prizes.

Only undergraduate students are eligible for any prize offered.

No student shall be eligible to enter any contest who has not been a resident student in this University for at least one semester preceding the semester in which the contest is to be held, and who is not a resident student in good standing in the University in the semester in which the contest is held.

No successful contestant may become for a second time a competitor for the same prize.

If in any contest there are fewer than two competitors, no prize will be given in that contest.

Students intending to compete in any essay-writing contest must notify the chairman of the committee on public exercises not later than March 15. Three typewritten copies of each essay must be in the hands of the chairman of the committee not later than May 15.

The conditions upon which the awards in the several contests are made may be learned upon application at the President's Office, or to the members of the committee on public exercises.

The following prizes are open to students in various departments of the University.

I. The Inter-Society Prizes

Prizes aggregating one hundred and fifteen dollars are awarded annually by the board of regents of the University to the literary society whose representatives excel in declamation, original oratory, essay-writing, and debate. The amounts of the several prizes are: for the debate, $50.00; for the oration, $30.00; for the essay, $20.00; and for the declamation, $15.00.

II. The Regents' Prize in Composition

A prize of fifty dollars is awarded annually by the board of regents of the University to the student in any one of the regular college courses who shall write the best essay on a topic selected by the committee on ways and means. The subject for 1912-1913 is "Dickens' Satires on Educational Conditions."

III. The Edward Thompson Company Prize

The Edward Thompson Company offers for the year 1912-13 to the student in the senior law class who shall write the best essay on some subject in law, to be selected by the faculty of the College of Law, a prize, consisting of a set of the Encyclopedia of Pleading and Practice, in twenty-three volumes. The value of this work is $138.00.

IV. The Bryan Prize in Political Science

The Hon. William J. Bryan has given a sum of money, the annual income of which is to be offered as a prize to the student in the University who shall write the best essay on some subject in the science of government. The amount of the prize for the present is fifteen dollars. The subject for 1912-1913 is "National Control of Corporations doing Inter-state Business."

V. The Tax Commission Prize

The members of the State Tax Commission of 1902, W. P. Hubbard, Henry G. Davis, John K. Thompson, L. J. Williams, and J. H. Holt, have donated the sum of $1,350, the income of which is to be used as a prize for the "best original work bearing on matters of taxation in West Virginia." The conditions of competition are determined by the Council of Administration. The amount of the prize at present is $70.00. The subject for 1912-1913 is "The Best Form of Road Tax for West Virginia."

VI. The Russell Love Morris Prize in Civil and Mining Engineering

Russell Love Morris, C.E., Professor of Civil Engineering, offers a prize of fifty dollars annually to the student in the department of civil and mining engineering who presents the best thesis on some subject of special application to the needs and resources of West Virginia.

HIGH SCHOOL DAY

In order to promote scholarship, literary proficiency, and pure athletics among the public high schools of West Virginia, and in order to strengthen the friendly relations that already exist between West Virginia University and such high schools, the University has established an annual High School Day.

The date of the third of these annual High School Days will be Thursday and Friday, May 15 and 16, 1913.

Members of the various public high schools of West Virginia are invited to meet at Morgantown at that time to participate in various contests for scholarship, prizes and medals, according to the following regulations:

1. All public high schools in West Virginia on the University's list of either accredited or recognized high schools are eligible to compete.

2. Only third-year pupils in three-year high schools and fourth-year pupils in four-year high schools are eligible.

3. Girls as well as boys are eligible to all the contests, except those in athletics.

4. The maximum number of competitors from any one school is four, and no student may compete in more than two of the following divisions. This rule does not forbid a school from having an unlimited number of contestants in the free-for-all athletic events.

5. The excess of railroad fare above $10.00, of students who

compete for scholarships, prizes, or medals shall be paid by the University.

6. The entertainment of the contestants for scholarships, prizes, and medals shall be provided for by the University High School Committee.

7. Six cash scholarships, worth $50.00 each, will be awarded under the following regulations:

When a student who wins one of these scholarships, enters the University, he will be credited with $50.00 and charged with fees and books until the close of his second year's attendance in the University, at which time he will be paid in cash, the excess of $50.00 scholarship above such charges, provided that in no case fees and books so charged shall aggregate more than $50.00.

These scholarships will be awarded as the result of examination to be held in Morgantown May 15 and 16, 1913, in Latin, history, English, algebra, geometry, physics, chemistry, French, and German. The class standing of the applicants will also be taken into consideration. Applicants will be examined in two subjects only, and they may choose in what two they will be examined from the above list. The examinations will be set at Morgantown by University instructors in the various departments represented.

8. Prizes.—Cash prizes will be awarded, as follows: (a) For original oration—first prize, $25.00; second prize, $15.00. (b) For essay—first prize, $20.00; second prize, $12.50. (c) For debate—first prize, $25.00; second prize, $15.00. (d) For declamation—for first prize, $15.00; second prize, $10.00.

9. Medals.—Five medals, the aggregate cost of which, shall not exceed $50.00, will be offered for excellence on the athletic field, in track events, (running), field events, (vaulting, jumping, hammer-throwing, etc.), and relay race.

No candidate will be allowed to enter more than two of these three classes. This does not apply to free-for-all athletic events.

THE MEN'S HALL

The Men's Boarding Hall is situated at 52 University Driveway. There are rooms for the accommodation of from twenty to twenty-five young men and dining-room accommodations for fifty. The rates are seventy-five cents a week for rooms and $2.50 a week for board. The hall is in charge of Mrs. F. M. Harris as matron.

THE WOMEN'S HALL

The Women's Hall is centrally located at the corner of Willey and Spruce streets, and will accommodate between forty and fifty

young women. Miss Susan Maxwell Moore, Dean of Women, is in charge of the Hall. Anyone desiring information as to prices, or available rooms in the Hall, should apply to Miss Moore.

BOARDING AND ROOMING PLACES

The matter of furnishing information to new students regarding suitable boarding and rooming places is in charge of the Y. M. C. A. and Y. W. C. A. of the University. On their arrival in Morgantown new students should come directly to Woodburn Hall where they will find complete lists of rooms and boarding places and also upper classmen who will help them in getting located and matriculated. During the opening days of the quarter committees from the two Christian Associations meet new students at trains and are ready to render them every assistance possible.

Young men desiring information in advance of their arrival in Morgantown may address C. E. Hilborn, Secretary of the Y. M. C. A., Morgantown, W. Va. During July and August information may be secured by writing to Frank B. Lewellyn, 570 Spruce street, Morgantown, W. Va. Young women may address Miss Pearl Hodges, 552 Spruce street, Morgantown, W. Va.

AID FOR STUDENTS

The Employment Bureau, organized by the University Y. M. C. A., undertakes to assist earnest and worthy students who are dependent upon their own efforts for the expenses of their education, to obtain various forms of employment in Morgantown. Prospective students desiring such aid should correspond with C. E. Hilborn, Secretary of the Y. M. C. A., before entering the University, stating the kind of work desired and the nature of past experience in any occupation. The work consists largely in waiting table, caring for rooms and lawns, clerking in stores, stenographic services, etc.

There is also a faculty committee on aid for students which cooperates with the employment bureau in securing work for students.

The Woman's League of the University has also established an exchange through the medium of which the women of Morgantown may obtain the services of young women students for such work as cooking, sewing and mending, or other light housework, caring for children, tutoring, assisting at social functions, or secretarial work of various kinds. The rate of remuneration is fixed by the Woman's League board and depends upon the time spent and the kind of work done.

TEACHERS' BUREAU OF INFORMATION

The Teachers' Bureau of Information, under the direction of the department of education, has for its aim:—

1. To keep a record of the students or alumni of the University who wish to teach, to gather information as to their academic and professional qualifications and personal fitness for school work, and to recommend for vacancies those who seem most likely to prove themselves efficient.

2. To keep a similar record of alumni who wish to be transferred to other positions.

3. To assist boards of educations and other school officials in securing teachers, and to coöperate with teachers' agencies in placing graduates of the University.

Students desiring recommendation for positions as teachers should take at least twelve hours in education. Those desiring recommendation for a position in a normal school or as principal or superintendent of schools, should take at least twenty hours in education.

No student is assured a position. General letters of recommendation are not given to students. Information obtained from professors and others is regarded as confidential. No charge is made for any services rendered. Blanks for registration will be furnished on application. The following is the committee on recommendation: President Hodges, Dean Trotter, and Professor Deahl, secretary.

THE COLLEGE OF ARTS AND SCIENCES

THE FACULTY.

THOMAS EDWARD HODGES, LL.D., *President*

FRANK BUTLER TROTTER, A.M., DEAN, *Professor of the Latin Language and Literature*

DANIEL BOARDMAN PURINTON, LL.D., *Professor of Philosophy.*

JAMES SCOTT STEWART, M.S., *Professor of Mathematics, Emeritus*

POWELL BENTON REYNOLDS, D.D., *Professor of Economics and Sociology, Emeritus*

ALEXANDER REID WHITEHILL, PH.D., *Professor of Chemistry*

SAMUEL B. BROWN, A.M., *Professor of Geology and Mineralogy*

ROBERT ALLEN ARMSTRONG, A.M., *Professor of the English Language and Literature*

ALFRED JARRETT HARE, A.M., *Professor of the Latin Language and Literature*

FREDERICK WILSON TRUSCOTT, PH.D., *Professor of Germanic Languages and Literatures*

JASPER NEWTON DEAHL, PH.D., *Professor of Education*

JOHN LEWIS SHELDON, PH.D., *Professor of Botany and Bacteriology*

JAMES MORTON CALLAHAN, PH.D., *Professor of History and Political Science*

ANTHONY WENCEL CHEZ, A.B., *Director of Physical Training*

JOHN NATHAN SIMPSON, M.D., *Professor of Anatomy and Physiology*

JOHN HARRINGTON COX, A.M., *Professor of English Philology*

FREDERICK LAWRENCE KORTRIGHT, D.Sc., *Professor of Chemistry.*

JOHN ARNDT EIESLAND, PH.D., *Professor of Mathematics*

ALBERT MOORE REESE, PH.D., *Professor of Zoology*

OLIVER PERRY CHITWOOD, PH.D., *Professor of European History*

C. EDMUND NEIL, A.B., *Professor of Elocution and Oratory*

CHAUNCEY WILLIAM WAGGONER, PH.D., *Professor of Physics*

WILLIAM SEWARD WEEKS, B.S., *Professor of Military Science and Tactics and Commandant of Cadets*

MADISON STATHERS, PH.D., *Professor of Romance Languages*

WAITMAN BARBE, LITT.D., *Professor of English*

ENOCH HOWARD VICKERS, A.M., *Professor of Economics and Sociology*

CHARLES EDWARD BISHOP, PH.D., *Professor of the Greek Language and Literature*

WILLIAM JACKSON LEONARD, *Associate Professor of Fine Arts*

SIMEON CONANT SMITH, A.M., *Associate Professor of Rhetoric*

DENNIS MARTIN WILLIS, LL.M., *Head of the Department of Commerce*

DAVID DALE JOHNSON, A.M., *Assistant Professor of English*

CLYDE EMIL WATSON, M.D., *Assistant Professor of Anatomy and Pathology*

ARLEIGH LEE DARBY, A.M., *Assistant Professor of Romance Languages*

LONNA DENNIS ARNETT, PH.D., *Librarian and Instructor in Library Science*

RACHEL HARTSHORN COLWELL, A.M., *Assistant Professor of Home Economics*

MARGARET BUCHANAN, A.B., *Instructor in Mathematics*

CHARLES MOON, B.S.C.E., *Instructor in Physics*

FREDERICK ROST KOELZ, A.B., *Instructor in German*

LOUISE FERRIS CHEZ, *Assistant Director of Physical Training*

FLORA RAY HAYES, A.B., *Assistant in Music*

ENTRANCE REQUIREMENTS.

For admission to the College of Arts and Sciences, the candidate must have credit for fifteen units, obtained by examination or on certificate from a duly accredited secondary school.

Of the fifteen units required for admission to the curricula leading to the degree of Bachelor of Arts, nine are definitely prescribed as follows:

	Units.
English	3
Latin	2
History	1
Mathematics—	
Algebra, 1 unit Plane geometry, 1 unit } Total	2
Science—	
Physics, Chemistry, Botany, or Zoology } Any one of the four	1
	—
Total prescribed	9

The remaining six units must be chosen as electives from the following list:

	Units
Latin	1 to 2
Greek	2 to 3
German	2 to 3
French	2 to 3
Mathematics—	
Algebra ½ unit Solid geometry, ½ unit Plane Trigonometry ½ unit	½ to 1½
History and Civics	½ to 2
Physics	1
Chemistry	1
Botany	½ to 1
Agriculture	½ to 1
Zoology	½ to 1
Physical Geography	½
Physiology	½
Drawing	½ to 1
Vocational Studies	½ to 2

A single unit of language will be accepted provided further work in that language is taken in the University.

Credit for work in vocational studies must be approved by the committee on classification and grades in each individual case.

For admission to the curricula leading to the degree of Bachelor of Science the requirements are the same as the foregoing, except that a modern language may be substituted for the two units of Latin prescribed and an additional unit of mathematics is prescribed—one-half unit of algebra and one-half unit of solid geometry or plane trigonometry.

For admission to the curricula leading to the degree of Bachelor of Science in Commerce the requirements are the same as those for the A.B. degree, except that a modern language may be substituted for the two units of Latin prescribed, and one unit of accounting is prescribed, thus leaving five units elective.

For a detailed statement of the amount of work required for each unit of entrance credit see page 34.

DEGREES

BACCALAUREATE DEGREES

There are three baccalaureate degrees conferred in the College of Arts and Sciences:

1. The degree of Bachelor of Arts.
2. The degree of Bachelor of Science.
3. The degree of Bachelor of Science in Commerce.

Amount of Work Required

The "semester hour" is the standard for computing the amount of work required for graduation in the curricula leading to these degrees. The "hour" represents the amount of work done in one semester (eighteen weeks) in one recitation hour with two preparation hours a week. No student is permitted to register for less than fourteen hours or more than seventeen hours of work in any one semester.

A baccalaureate degree in the College of Arts and Sciences is conferred upon any student who satisfies all entrance requirements

and secures credit for one hundred and twenty-eight semester hours selected in accordance with the following provisions.

Groups of Studies

The subjects of study are arranged in three groups:

I. LANGUAGE: English, Latin, Greek, German, French, Spanish, Italian.

II. SCIENCE: Mathematics and Astronomy, *Engineering, Physics, Chemistry, Geology, Botany, *Horticulture, *Forestry, *Agronomy, *Animal Husbandry, *Farm Management, Zoology, *Entomology, Anatomy, Physiology, Bacteriology, Home Economics, *Military Science, *Physical Training.

III. PHILOSOPHY: Philosophy, Education, History, *Law, Political Science, Economics and Sociology, *Commerce, *Music, *Fine Arts.

*Cannot be chosen as major subjects for the A.B. and B.Sc. degrees.

General Requirements

Major Subjects. At the beginning of the Sophomore year the student must select his major study from one of the above groups. The work required in the major is thirty hours in one subject or twenty hours in one subject and ten hours in another allied subject.

The head of the department to which the major subject belongs becomes the student's class officer. (See page 39.) When the student has selected his major subject, he will not be permitted to change to another major without the consent of the committee on classification and grades.

Minor Subjects. Thirty hours of work in each of the two remaining (minor) groups is required. Less than six hours in any one subject will not be counted as part of the thirty hours required.

Required English. Six hours of rhetoric and composition (English 1 and 2) and four hours of English literature (English 26 and 27) are required of all candidates for degrees.

Special Requirements

For the Degree of Bachelor of Arts.

(a) Languages:—

(1) Ancient language: In addition to the two units of Latin prescribed for entrance, twenty-three hours of ancient language are required; if however the student offers more than two units for entrance this requirement will be proportionately reduced. The time may be

divided between Latin and Greek at the option of the student, provided that not less than ten hours in a language be elected.

(2) Modern language: Ten hours in one modern language is required.

(b) Philosophy: Twelve hours; two out of the three following subjects or groups of subjects, are required: history, six hours; economics and sociology, six hours; philosophy and education, six hours.

(c) Science: Sixteen hours; two out of the three following subjects are required: mathematics, eight hours; physics or chemistry, eight hours; botany or zoology, eight hours.

For the Degree of Bachelor of Science.

(a) Language: If neither Latin nor modern language was offered for entrance, twenty hours each of French and German are required; if two units of Latin were offered, ten hours of French and twenty of German or ten hours of German and twenty of French are required; if either French or German was offered for entrance ten hours of the one offered and twenty of the one not offered are required; or if both languages were offered for entrance, ten hours of each are required.

(b) Science: Sixteen hours; two out of the three following subjects are required; mathematics, eight hours; physics or chemistry, eight hours; botany or zoology, eight hours.

(c) The major subject must be selected from the science group.

For the Degree of Bachelor of Science in Commerce.

(a) Languages: Twenty hours in modern languages are required.

(b) Philosophy: Thirteen hours in history (courses 19, 23, 26, 29, or 35 may be offered); ten hours in law and ten hours in economics are required.

(c) Science: Ten hours in any one subject.

(d) The major subject must be commerce.

Elective Courses

The remaining work necessary to make up the total of one hundred and twenty-eight hours required may be selected from any of the courses offered in the College of Arts and Sciences. Work not to exceed fifteen hours in the College of Law or the College of Agriculture and not to exceed thirty hours in the College of Engineering may be included in the list of elective credits offered by students in the College of Arts and Sciences. The total number of hours elected from other colleges shall not, however, exceed thirty in all.

MASTER OF ARTS

The degree of Master of Arts is conferred upon graduates who have received the degree of Bachelor of Arts from West Virginia University or from another institution of equal grade, upon the following conditions:

1. The candidates must pursue studies in residence at this University for at least two semesters.

2. The application of the student to become a candidate for the degree of Master of Arts must be accompanied by the proper credentials and a general outline of the course of study.

3. If the application is accepted, the committee on classification and grades will appoint a sub-committee of three, consisting of the candidate's major professor and two other professors, whose duties shall be:

(a) To arrange and approve a specific course of study
(b) To act as advisers
(c) To examine and pass upon the thesis
(d) To conduct the final oral examination

4. The candidate shall present thirty hours, and a thesis, or with the consent of the sub-committee seven additional hours may be substituted for the thesis; at least ten of the thirty hours shall belong to his major subject. In no case shall the aggregate of major work be fewer than forty hours. The remainder of the student's work shall be in one or more allied subjects.

5. The specific course of study must be presented to the committee on classification and grades within the first four weeks of the first semester.

6. If the candidate presents a thesis it shall show marked attainment in his major subject. The thesis shall be prepared under the direction of the head of the department in which the student has his major, and shall be submitted for the approval of the committee on classification and grades at least four weeks previous to the commencement day at which the degree is expected. The thesis shall be presented in such form as the committee on classification and grades shall prescribe and approve.

7. If the thesis is approved, two typewritten or printed copies shall be deposited in the University library at least one week before the degree is to be conferred.

8. The oral examination shall cover the thesis and the major courses pursued by the candidate, or such part thereof as the subcommittee shall deem desirable.

9. The committee on classification and grades will set the time

for the oral examination and shall appoint some one to represent them at the examination. The examination must be held at least three weeks before commencement day.

10. The sub-committee will report their opinion of the thesis and the result of the examination to the committee on classification and grades at least ten days before commencement day.

11. No work done before graduation will be credited toward the master's degree.

12. In case a student has failed to take the A.M. degree within two years after his course of study has been approved, his candidacy shall elapse and can be renewed only upon a new application to the committee on classification and grades.

MASTER OF SCIENCE

The degree of Master of Science is conferred upon students whose baccalaureate degree has been in science, upon the same conditions as those governing candidates for the degree of Master of Arts, stated above.

DOCTOR OF PHILOSOPHY

The degree of Doctor of Philosophy is conferred upon Masters of Arts of West Virginia University, or holders of an equivalent degree, upon the following conditions:

1. Candidates must have spent at least two years in resident study at some university, and must be in residence at this University during the last two semesters before receiving the degree. The requirements of time, however, are wholly secondary. The degree will not be given for the completion of prescribed work, nor for study during a stated period, but only on the ground of long study and high attainments in one branch of learning.

2. The method of application, appointment of sub-committee, etc., shall be the same as for the degree of Master of Arts, described in sections 2 and 3 on page 58.

3. Candidates shall choose a major subject and cognate minor work. To the latter they shall devote not more than one-third of their time.

4. The candidate must prepare (under the direction of the head of the department in which he has his major) a dissertation which shall give evidence of his power of independent investigation, and shall be a real contribution to knowledge.

5. Not later than nine months before the date on which the candidate expects to receive the degree, he shall file with the committee

on classification and grades the subject of his thesis, with the approval of his major professor, a full statement of his work in candidacy for the degree, and shall satisfy this committee of his ability to use French and German in his investigation.

6. The thesis shall be presented to the committee on classification and grades at least two months before the date on which the degree is expected. It shall be referred to a committee of three, one of whom shall be a person not connected with the University. If the thesis is approved, the candidate shall proceed to an examination, which shall be conducted by the instructors in charge of his subjects, with the aid of the same committee of three, the sub-committee and the committee on classification and grades. The date of the examination shall be determined by the committee on classification and grades.

7. If the candidate satisfactorily passes the examination he shall, before receiving the degree, deposit with the librarian of the University a typewritten or printed copy of the thesis, but if the thesis cannot be published before the conferring of the degree the candidate must either furnish the committee on classification and grades evidence of completed arrangements for publication or deposit with the treasurer of the University a sufficient sum to cover the cost of publication in approved form. When the thesis is published one hundred copies shall be presented to the University library and the deposit made with the treasurer will be returned.

SPECIAL DEPARTMENTAL ANNOUNCEMENTS

DEPARTMENT OF COMMERCE

For the purpose of enabling young men to start in business with the advantages of a trained mind and scientific knowledge of modern business methods and conditions, a four year curriculum is offered leading to the degree of Bachelor of Science in Commerce. In the arrangement of this curriculum an effort has been made to combine general culture subjects with instruction in economic laws and their relation to the various departments of trade, in commercial and industrial organization, and in general and special accounting.

Students who desire to prepare themselves to teach commercial subjects in the high schools of West Virginia may secure a state teacher's certificate in addition to the degree of Bachelor of Science in Commerce by electing courses 1, 2, 3, 4, 5, and 10 in Education during their junior and senior years. Students who register in the department with the idea of fitting themselves to teach commercial

branches will be given every opportunity and facility for such preparation.

The department also offers courses preparing students for the Government Civil Service Examinations. Further information may be secured by corresponding with the head of the department.

For a statement of the entrance requirements for this curriculum see page 55. For the statement of the requirements for graduation see page 57.

DEPARTMENT OF MEDICAL SCIENCE

The following schedule of courses is offered for the guidance of students in the College of Arts and Sciences who wish a four years' course which will prepare them for the study of medicine.

With the consent of the committee on classification and grades candidates for the degree of B.Sc. with medical science as their major will be permitted to offer this course in satisfaction of the requirements for the degree instead of the usual requirements set forth on pages 56 and 57.

Suggested Schedule for Students in Medical Science

Freshman Year

First Semester		*Second Semester*	
Chemistry 1	4 Hrs.	Chemistry 2	4 Hrs.
English	5 "	English	5 "
Modern language	5 "	Modern language	5 "
Chemistry 3	2 "	Elective	2 "
Military Science	1 "	Military Science	1 "
	17 "		17 "

Sophomore Year

Zoology 1	4 Hrs.	Zoology 2	4 Hrs.
Modern language	5 "	Modern language	5 "
Elective	6 "	Zoology 9	3 "
Military Science	1 "	Botany 5	3 "
		Military Science	1 "
	16 "		16 "

Junior Year

Physiology 2	5 Hrs.	Physiology 3	5 Hrs.
Osteology 11	3 "	Pharmacology 41	5 "
Embryology	3 "	Physiology 4	3 "
Neurology	2 "	Dissecting 13	5 "
Histology 12	3 "		
	16 "		18 "

Senior Year

Bacteriology	5 Hrs.	Pathology 22	4 Hrs.
Pharmacology 43	3 "	Medical Jurisprudence 51	1 "
Phys. diagnosis 31	2 "	Elective	3 "
Chemistry 10	5 "	Chemistry 11	5 "
Pathology 21	2 "	Dissecting 14	4 "
	17 "		17 "

Students who enroll in the College of Arts and Sciences with the intention of completing one year of academic work in preparation for admission to a college or school of medicine should offer either for entrance or as part of their freshman work the following courses in science or their equivalent:

Chemistry, courses 1 and 2.
Physics, courses 1, 2, 3 and 4.
Zoology, courses 1 and 2.
Botany, course 5.

Students who do not desire to become candidates for the B. Sc. degree but who wish to prepare for entrance with advanced standing at a medical college may be admitted to the work of the last two years of the curriculum outlined above as soon as they have credit for all entrance requirements and for the courses in science named in the preceding paragraph.

DEPARTMENT OF PHYSICAL TRAINING

For the special announcement of required and elective work in this department see page 109.

COURSES OF INSTRUCTION

In the following announcements each course described counts for the number of hours in parenthesis after the name of the course. Whenever possible, the semester during which the course is given, the hour, the name of the instructor, and class room, are stated at the end of the announcement of each course. For convenience it is customary to designate the courses of study by the name of the department and the number of the particular course. Thus the course in psychology is known as "Philosophy 3"; the course in plane trigonometry is known as "Mathematics 4"; the course in electrical measurements is known as "Physics 10"; etc. The abbreviations used are: W., Woodburn Hall; S., Science Hall; M., Martin Hall; M. H., Mechanical Hall; C., Commencement Hall; A., Agricultural Building; S. F., South Fife Cottage; N. F. North Fife Cottage; G., Gymnasium; L., Library.

AGRONOMY AND ANIMAL HUSBANDRY

Credit will be given in the College of Arts and Sciences for course 1 and 2 in Agronomy and course 1 in Animal Husbandry in the College of Agriculture. See pages 175-6.

ANATOMY

For courses in this subject see page 106.

BOTANY AND BACTERIOLOGY

Professor Sheldon

The laboratories for botany and bacteriology are supplies with gas and electricity, hot and cold water, reagents, glassware, sterilizers, incubators, microscopes and accessories, dissecting lenses, microtomes, paraffin oven, water baths, and the more simple physiological apparatus.

In the libraries of the University and Experiment Station are a number of current botanical and bacteriological publications besides many bound volumes, texts, works of reference, monographs, and bulletins on botany, bacteriology, and related subjects.

Advanced students may consult the herbarium of the Experiment Station and Professor Sheldon's private herbarium, which is especially rich in pathological specimens and certain groups of West Virginia plants.

Botany 1 and 2, or an equivalent, are prerequisites for all other courses in botany. A reading knowledge of one or more of the fol-

lowing languages will be found desirable, and even essential, in order to pursue certain advanced courses: Latin, German and French.

Students expecting to teach botany in the high schools are advised to take courses 1, 2, 5, 6, 12, and 13.

Students will find it to their advantage to consult with the head of the department before registering for courses in botany and bacteriology.

Botany.

1. **General Botany.** (4 Hrs.) An introductory study of the cell is followed by the morphology and physiology of representative species of algæ and fungi.

First semester, W. F., 9:00; laboratory, M. W. or W. F., 2:00. N. F.

2. **General Botany.** (4 Hrs.) Continuation of Botany 1. Morphology and physiology of liverworts, mosses, ferns, and seed plants.

Second semester, W. F., 9:00; laboratory, M. W. or W. F., 2:00. N. F.

5. **Systematic Botany of Seed Plants.** (3 to 5 Hrs.) Principles of classification of the more important families. Practice in description, identification, and classification.

Second semester, one class hour to be arranged; six to twelve hours of laboratory work in the herbarium or field. N. F.

6. **Systematic Botany of Seed Plants.** (3 to 5 Hrs.) Continuation of Botany 5.

First semester, one class hour to be arranged; six to twelve hours of laboratory work in the herbarium or field. N. F.

Note. Courses in systematic botany of the fresh-water algae, fungi, liverworts, mosses, and ferns will be arranged for students who have had adequate training for such courses.

12. **Plant Physiology.** (3 Hrs.) A fundamental course on the relation of plant structure to stimulus and function.

First semester, Tu. Th., 10:00; laboratory, Tu. or Th., 2:00. N. F.

13. **Plant Physiology.** (3 Hrs) Continuation of Botany 12.

Second semester, Tu. Th., 10:00; laboratory, Tu. or Th., 2:00. N. F.

14. **Plant Pathology.** (3 Hrs.) Botany 12 and 13 should precede or accompany courses in plant pathology. An elementary course on the development of plant pathology and the nature, causes, and control of the common diseases of economic plants.

First semester, F., 10:00; six hours work in the library, laboratory, or field. N. F.

15. **Plant Pathology.** (3 Hrs.) Continuation of Botany 14.

Second semester, F., 10:00; six hours work in the library, laboratory, or field. N. F.

17. **Advanced Plant Pathology.** (3 to 10 Hrs.) The critical investigation of an assigned or approved problem, with frequent consultations.

Throughout the year, hours by appointment. N. F.

18. **Histology.** (3 to 10 Hrs.) A study of tissues and tissue aggregates. The technique of sectioning, mounting, and staining.

Both semesters, hours to be arranged. N. F.

Note: For courses in horticulture see page 177.

Bacteriology.

1. **General Bacteriology.** (3 Hrs.) This course has been arranged for students who desire a general knowledge of the morphology and physiology of bacteria and a minimum training in cultural and miscroscopic technique.

Second semester, Tu. Th., 9:00; laboratory, Tu. or Th., 2:00. N. F.

2. **Agricultural Bacteriology.** (5 Hrs.) Prerequisite Bacteriology 1. Bacteria in their relation to fermentation and decay, to soils and crops, to the pollution of water supplies, to milk and its products, and to the diseases of cultivated plants and domestic animals.

Second semester, Tu. Th., 8:00; eight hours of laboratory work. N. F..

3. **Medical Bacteriology.** (5 Hrs.) This is primarily a laboratory course, supplemented by lectures and recitations, on the preparation, sterilization, and use of culture media, followed by a study of the morphology and life activities of selected non-pathogenic and pathogenic bacteria, by means of cultures, inoculation of animals, and the examination of exudates.

First semester, Tu. Th., 8:00; eight hours of laboratory work. N. F.

CHEMISTRY

Professor WHITEHILL and Professor KORTRIGHT

The rooms assigned to this department consist of a lecture room and four large laboratories. Connected with those are a dark room, two weighing rooms, and two preparation rooms. The laboratories afford working space for one hundred students at a time and are supplied with water, gas, chemicals, and apparatus necessary for practical work. This apparatus includes a large number of pieces used in illustrating the elementary principles of the science, as well as of the more expensive instruments used in analytical work. A collection of the latest reference and text-books is kept within easy reach of the students.

1. Inorganic Chemistry. (4 Hrs.) Primarily for beginners, but students who have offered elementary chemistry for entrance credit may take the course and receive credit on their college work. The course includes a systematic study of the laws of chemical combinations; the source, preparation, properties and compounds of the non-metallic elements and the theories and laws of chemical operations. Experimental lectures, recitations and laboratory work.

First semester, first section, M. W. F., 9:00, Professor WHITEHILL, 20 S.; second section, M. W. F., 11.00; Professor WHITEHILL, 20 S. Laboratory, M. 2:00; Professor WHITEHILL, Professor KORTRIGHT and assistants, 21 and 22 S.

2. Inorganic Chemistry. (4 Hrs.) Continuation of Chemistry 1. This course includes the study of the metallic elements and special attention is paid to the applications of chemistry to agriculture, engineering, medicine and every-day life. Experimental lectures, recitations and laboratory work.

Second semester, first section, M. W. F., 9:00; Professor WHITEHILL, 20 S.; second section, M. W. F., 11.00; Professor WHITEHILL, 20 S. Laboratory, M. 2:00; Professor WHITEHILL, Professor KORTRIGHT and assistants, 21 and 22 S.

3. Organic Chemistry. (2 Hrs.) This course is open to students who have completed any standard elementary text in inorganic chemistry, accompanied by individual laboratory work. The course includes the study of the more important organic compounds, especially those which have a wide technical application and those which

are familiar in the operations of daily life. Experimental lectures, recitations and laboratory work.

Second semester, T., Th., 9:00; Professor WHITEHILL, 20 S.

4. Qualitative Analysis. (2 Hrs.) Required of all candidates for engineering degrees. Continuation of Chemistry 2. This is a course treating of those properties which are of importance in the separation and identification of the common metals and acids. In addition to the work in the laboratory there are lectures and recitations in which chemical reactions are studied from the point of view of the mass law and the theory of electrolytic dissociation.

First semester, T., Th., 2:00-4:00; Professor KORTRIGHT, 33 S.

5. Qualitative Analysis. (4 Hrs.) For students in the College of Arts and Sciences and in the College of Agriculture. Continuation of Chemistry 2. A course similar in its general nature to Chemistry 4, but more extended.

First semester, M., 2:00; Professor KORTRIGHT, 23 S.; laboratory, W. F., 2:00-5:00; Professor KORTRIGHT, 33 S.

6. Quantitative Analysis. (5 Hrs.) A course treating of the elementary principles of gravimetric and volumetric analysis.

Second semester, M., 2:00; Professor KORTRIGHT, 23 S.; laboratory, T., W., Th., F., 2:00-5:00; Professor KORTRIGHT, 32 S.

7. Quantitative Analysis. (4 Hrs.) Continuation of Chemistry 6. In this course more difficult analyses will be made and such substances as limestone, coal, boiler water, etc., will be examined.

First semester, T., W., Th., F., 2:00-5:00; Professor KORTRIGHT, 32 S.

8. Organic Quantitative Analysis. (5 Hrs.) This course treats of the analysis of food stuffs, beverages, etc. Prerequisite; Chemistry 3, 5 and 6.

Second semester, 2:00-5:00; Professor KORTRIGHT, S.

9. Medical Organic Chemistry. (5 Hrs.) Required of medical students. Prerequisite: Chemistry 1, 2 and 3.

First semester, 10:00-12:00; Professor KORTRIGHT.

10. Medical Analysis. (5 Hrs.) Required of medical students. Continuation of Chemistry 9.

Second semester, 10:00-12:00; Professor KORTRIGHT.

11. Quantitative Analysis. (2 Hrs.) Required of all students who select chemistry as their major subject. The course includes practice in the analysis of iron and steel, iron ores, limestone, sand, clay and other materials usually brought to the laboratory of an iron and steel works.

First semester, T., Th., Professor WHITEHILL, 21 S.

12. Quantitative Analysis. (2 Hrs.) Continuation of the same line of work as indicated in course 11.

Second semester, T., Th., Professor WHITEHILL, 21 S.

13. Chemical Preparations. (2 Hrs.) This course will include the preparation of some of the more important inorganic and organic compounds. Quantitative work in the verification of chemical laws will be undertaken, and the work will be made as fully illustrative of laboratory processes as possible. The course is designed to meet the requirements of students who wish to take advanced work in general chemistry, or who wish to become teachers of the science. Prerequisite: Chemistry 1 and 2 or their equivalent.

First semester, T., Th., 2:00; Professor WHITEHILL, 21 S.

14. Chemical Calculations. (2 Hrs.) This course is designed for students who wish to study the mathematical principles which are involved in chemical operations. It will include the consideration of questions involving weight and volume reactions, atomic and molecular weight determinations, the methods of calculating the results of analyses and the various other computations of importance to the student of chemistry. Prerequisite: Chemistry 1 and 2 or their equivalent.

Second semester, T., Th., 2:00; Professor WHITEHILL, 21 S.

15. Special Work. Chemistry offers a wide field for study and investigation. Special work in any of the various departments of the science may be taken in the laboratory under the direction of the instructors, and credit will be given in proportion to the amount of work accomplished.

CIVIL ENGINEERING

Credit not to exceed thirty hours will be given in the College of Arts and Sciences for certain courses in this subject given in the College of Engineering. See page 136.

COMMERCE

1. Special Accounting. (3 Hrs.) Required of all candidates for the B.Sc.C. degree. A theoretical course in keeping the accounts in special lines of business. The object of this course is to familiarize the student with nomenclatures of the various lines of business, and to furnish him with a practical working knowledge of the special accounts necessary to handle the specific lines of trade. The work outlined in the text-books has been taken from actual accounts kept in the different kinds of business mentioned.

First semester; T. Th., 10:00, Mr. WILLIS, 12 M. Laboratory, hours to be arranged, Mr. WILLIS, 12 M.

2. Materials of Commerce. (3 Hrs.) A description of the surface of the earth, with special reference to the production, manufacture, transportation and exchange of articles of trade. A general outline of the countries of the world; soil, climate, agricultural products, forests, manufactories, quarries, mines, centers of industry, foreign relations, ways of communication, social relations and conditions, imports, exports and markets. Special attention is given to the duty of the United States.

First semester; M. W. F., 11:00, Mr. WILLIS, 12 M.

3. Special Cost Accounting. (3 Hrs.) Accounting necessary to obtain at any time the exact cost of articles produced by the manufacturer; the origin and cost of raw material; record of stock on hand, and consumption in process of manufacture; comprising purchase record and invoice system, freight distribution, stock and store room systems and records, the various methods by which material is transferred from stock to the process of manufacturing, perpetual inventories, requisitions, etc.

Second semester: M. W. F., 11:00, Mr. WILLIS, 12 M. Laboratory, hours to be arranged, Mr. WILLIS, 12 M.

4. Corporation Administration. (3 Hrs.) A course presenting the accounting necessary in the formation of a corporation and its operation. The records of the secretary of the corporation and the accounts growing out of the minutes, etc.; the accounts affected by the issuing of installment certificates of stock, by their transfer, by their surrender, by the issuing of stocks, and of additional stocks, by

dividends, by changes from partnerships into corporations, etc.; methods of preparing financial statements for publication.

First semester: T. Th., 11:00; Mr. WILLIS, 12 M. Laboratory, hours to be arranged, Mr. WILLIS, 12 M.

5. Railroad Accounting—General. (3 Hrs.) An examination of the system of accounting necessary to meet the demands of the complicated railroad methods of modern times, embracing organization, capitalization, speculation, rate-making, competition, pooling, consolidating, and general stock manipulation, etc. Prerequisite: Commerce 3.

Second semester: T. Th., 11:00; Mr. WILLIS, 12 M. Laboratory, hours to be arranged, Mr. WILLIS, 12 M.

6. Corporation and Trust Finance. (3 Hrs.) An exposition of the financial organization and conduct of large corporations; the accounting necessary in railroad and industrial combinations and mergers; a review of the laws and the customs that govern the financial management of foreign corporations.

First semester; M. W. F., 9:00, Mr. WILLIS, 12 M.

7. Auditing. (3 Hrs.) The course is based on an assumed knowledge of accounts both as an art and as a science. The student passes naturally from a study of practical accounts and the theory of accounts to that of professional examinations and oversight. The study is conducted from the standpoint of traveling or assistant auditor, or that of the expert accountant. Special attention is given to reports of auditors and finance committees of states, corporations, and municipalities, etc.

Second semester; M. W. F., 9:00, Mr. WILLIS, 12 M.

8. Practical Banking. (3 Hrs.) The object of this course is to give the student a comprehensive knowledge of the inside workings of a bank, and of the laws regulating national and state banks. The subjects treated are deposits, duties of depositors; reserves, loans and discounts; circulating notes, credit and commercial paper; accommodation paper; checks and bills of exchange; branch banking; the duties of officers and clerks; the liabilities of directors and stockholders; and bank management in general. Prerequisite: Commerce 1.

Second semester; T. Th., 10:00, Mr. WILLIS, 12 M. Laboratory, hours to be arranged, Mr. WILLIS, 12 M.

9. Accounting Procedure. (3 Hrs.) Required of all candidates for the B.Sc.C. degree. Installation of accounting systems; theory of accounts and its adaptability to practical work; books of original

entry, their connection with the general scheme of business; depreciation of current assets and working capital; statements prepared for establishing a commercial rating and credit; a consideration of personal and impersonal accounts; the best methods of combining for quick and accurate consideration of the condition of the business, etc.

Second semester; T. Th., 9:00, Mr. WILLIS, 12 M. Laboratory, hours to be arranged, Mr. WILLIS, 12 M.

10. **Bank and Trust Company Administration.** (2 Hrs.) This course furnishes a complete exposition of all the methods of accounting which relate principally to banks and modern trust companies. In connection with the lectures in this course, blanks and forms collected from the best regulated banks and trust companies in the country are examined by students. Prerequisite: Commerce 8.

First semester; T. Th., 9:00, Mr. WILLIS, 12 M.

11. **Executors and Trustees.** (2 Hrs.) Designed especially for students in the College of Law. This course exhibits the best methods for financial reports of executors and trustees, receivers, etc., and the legal rights and duties of trustees and executors so far as they relate to accounting.

First semester; T., Th., 8:00, Mr. WILLIS, 12 M.

12. **History of Commerce.** (3 Hrs.) History of commerce; methods of exchange in ancient times; shipping of the ancients; fairs and markets; results of maritime discoveries; changing the commercial routes; international treaties affecting commerce; scientific and industrial discoveries affecting commerce; trade restrictions; boards of trade; stock and produce exchanges; circulation of commodities between cities and countries; trade statistics.

Second semester; M. W. F., 11:00, Mr. KING, 18 M.

13. **Secretarial Studies.** (5 Hrs.) A series of studies designed for students who may desire to prepare for secretarial positions, or for those who are likely either to have offices of their own or to be entrusted with the management of other offices. The student is given stenographic exercises and is instructed in the most recently approved methods of office management and administration. Lectures, recitations and laboratory work.

First semester: M. W. F., 11:00, Mr. KING, 18 M. Laboratory, hours to be arranged, Mr. KING, 18 M.

14. **Secretarial Studies.** (4 Hrs.) Continuation of Commerce 13. Lectures, recitations and laboratory work.

Second semester; T., Th., 10:00, Mr. KING, 18 M. Laboratory, hours to be arranged, Mr. KING, 18 M.

15. Transportation. (3 Hrs.) Designed especially for students in commerce or for others who may be interested in economic subjects. A study of the various transportation systems of the United States from a historical and economic standpoint, with special reference to the railway and its importance in the development of our internal commerce. Considerable time is devoted to a study of rate-making, federal and state regulation and the functions of the Interstate Commerce Commission. Lectures and recitations.

First semester; M. W. F., 9:00, Mr. KING, 18 M.

16. Transportation. (3 Hrs.) Continuation of Commerce 15. A study of the transportation systems of the United States from a historical and economic standpoint, with special reference to water transport; the status of our inland water transportation; the international importance of the Panama Canal; and the position of American shipping in the world's commerce. Lectures and recitations.

Second semester, M. W. F., 9:00; Mr. KING, 18 M.

17. Property Insurance. (3 Hrs.) An investigation of the historical, economical, and legal aspects of fire, marine, fidelity, title and credit insurance; the rules governing such insurance and their interpretation; adjustments of losses, etc.

First semester, M. W. F., 8:00, Mr. KING, 18 M.

18. Foreign Trade Relations. (3 Hrs.) A study of the trade relations of the United States with foreign countries; a review of the problems confronting our manufacturers and exporters in connection with sales abroad; the tariff and reciprocity; various methods and suggestions offered for the development of our foreign trade.

Second semester; M. W. F., 8:00, Mr. KING, 18 M.

19. Manufacturing Industries. (2 Hrs.) State of manufactures in England in 1750; the rise of the factory system and its industrial and social consequences; a survey of the leading manufacturing industries in the United States; comparison of our industrial development with that of the United Kingdom, Germany, and other prominent European countries.

First semester; T., Th., 10:00, Mr. KING, 18 M.

20. Teaching of Commercial Subjects. (3 Hrs.) Designed for students who are preparing to teach in the commercial departments of high schools. Methods and order of presentation; choice and use of texts; outline and distribution of the work; plans for stimulating interest and obtaining results; practical application of the principles, etc.

—— semester, M. W. F., —— Mr. ———, — M.

ECONOMICS AND SOCIOLOGY

Professor VICKERS

Instruction in this department is designed to meet three special needs of students: (1) Training for individual efficiency in getting a living under present economic and social conditions; (2) training which will enable them to understand the existing economic and social order—whence arise many urgent problems of the time—and intelligently to discharge their duties as citizens; (3) training to prepare those so electing to continue advanced study and specialization in economics and sociology.

Economics 1 will be helpful to students in all other courses in the department; a prerequisite for all students in Economics 2 and 3, and for others than juniors, seniors and graduates in Economics 4 and 7. Courses in sociology should, if practicable, be deferred to the junior and senior years.

Economics

1. Principles of Economics. (5 Hrs.) For all students desiring foundation training in economics, whether as preparation for advanced courses of study or for intelligent grasp of actual economic conditions and problems. General course on fundamental principles governing consumption, production, distribution and exchange of wealth.

First semester, 8:00; 14 S.

2. Distribution of Wealth. (3 Hrs.) Considers actual apportionment of wealth among the several classes of society. Special attention given to effects of competition, monopoly, combinations of capital and labor, government regulation, methods of economic organization. Prerequisite: Economics 1.

Second semester; M.W.F., 8:00; 14 S.

3. History of Economic Thought. (2 Hrs.(Traces the development of economic theories from antiquity to the present time. Causes, nature and effects of change in theory, also relations between economic theories and economic and political institutions, sought out. Prerequisite: Economics 1.

Second semester; T.Th., 9:00; 14 S.

4. Relations of Government to Economic Enterprise. (2 Hrs.) Considers the functions of government, both state and municipal, in relation to economic enterprises; conditions requiring government action; principles and expediency of government regulation and of government ownership; methods adopted and results obtained for

typical enterprises in this and other countries. Prerequisite: consent of instructor. (Omitted, 1912-13.)

Second semester; T.Th., 9:00; 14 S.

5. Money, Credit and Banking. (3 Hrs.) Treats the nature and functions of money; nature and uses of credit; functions of banks and principles of banking as revealed in the banking systems of leading countries.

First semester; M.W.F., 9:00; 14 S.

6. Public Finance. (4 Hrs.) Treats principles governing expenditures of modern governments; sources of revenue; principles and methods of taxation; requirements of an adequate tax system; uses of public credit; principles and methods of financial administration as revealed in fiscal systems of leading countries.

Second semester; T.W.Th.F., 9:00; 14 S.

7. Labor Problems. (3 Hrs.) Treats the origin and nature of labor problems, methods and agencies of amelioration and reform; woman and child labor, sweating, immigration, unemployment; labor legislation, conciliation, arbitration; coöperation, profit-sharing, insurance, industrial education. Prerequisite: Economics 1, or consent of instructor.

Second semester; M.W.F., 11:00; 14 S.

Sociology

1. Elements of Sociology. (4 Hrs.) A study of the origin and nature of societal forces; how they operate selection and change, determine customs, give form to such fundamental institutions as language, religion, property, government, marriage, and differentiate social classes and groups.

First semester: M. T. Th. F., 10:00; 14 S.

2. Social Structure and Functions. (3 Hrs.) A study of the anatomy and physiology of existing society; social elements, organs and institutions; their mutual relations, actions, reactions and resulting conditions.

Second semester: M. T. Th., 10:00; 14 S.

3. Social Pathology. (2 Hrs.) Deals with defective, dependent and delinquent classes and resultant problems of charity, pauperism, crime. Investigates causes, palliatives, preventives; also methods of organization and administration.

Second semester; T.Th., 8:00; 14 S.

Note: For course in rural economics see page 176.

EDUCATION

Professor DEAHL

The courses offered in this department aim to contribute to the educational influences and to the professional efficiency of the schools of the state in the following ways: 1, To interest those students who may without intending to use the knowledge in teaching desire to study the science of education as a part of their general culture. 2. To afford university students who wish to teach for a time after graduation the means of professional training commensurate with their academic training. 3. To furnish appropriate professional education to University students, and to any experienced teachers of suitable age and the attainments, who may desire to fit themselves for teachers, principals, or superintendents of schools.

Students who elect education as their major are urged to do sufficient work in some one department to prepare them to teach a particular subject, as English, physics, mathematics, etc.

1. History of Education, Ancient and Mediæval. (3 Hrs.) A study in the evolution of ideas and of education ideals; education as a social factor in the development of civilization. A brief study of some one Oriental system such as the Chinese, Hebrew, or Egyptian education; the forces and ideas and ideals that fashioned ancient education—social bonds, individualism, reason, moral freedom, etc.; the development of the Christian schools, moslem education, the seven liberal arts, monasticism, scholasticism, rise of universities, the renaissance and reformation, teaching organizations.

First semester; M.W.F., 9:00; 24 W.

2. History of Education, Modern. (3 Hrs.) A study in the development of education since the reformation. The development of modern educational theory—(a) the humanistic, (b) the realistic, (c) the scientific; physiological, psychological, and sociological ideas of education; the development of modern national, state, and city systems and of modern programs of studies and of methods.

Second semester; M.W.F., 9:00; 24 W.

3. Modern Educational Theory. (2 Hrs.) The purpose of this course is to trace the development of modern educational thought to the present time. A summary of the theory and practice of mediæval education will be followed by a study of the educational doctrines as found in the lives and writings of Pestalozzi, Herbart, Froebel, and other reformers.

Second semester, T.Th., 9:00; 24 W.

4. Philosophy and Education. (3 Hrs.) This course aims to lay the basis of a scientific theory of education. The process of education is explained from the standpoint of the doctrine of evolution; the principles thus arrived at are applied from the standpoint of the history of civilization, the developing powers of the child, and the cultivation of individual and social efficiency.

First semester; M.W.F., 11:00; 24 W.

5. Philosophy of Education. (3 Hrs.) A continuation of course 4.
Second semester; M.W.F., 11:00; 24 W.

6. School Administration and Supervision. (2 or 3 Hrs.) This course is intended primarily for principals and superintendents of schools, and for those who are preparing for such school work. The course deals with such topics as: school boards, school buildings and grounds, school equipment, the preparation of principals and superintendents, the preparation of teachers, the selection and promotion of teachers, city and rural supervision, examinations and tests, grading and promoting pupils, etc. (Omitted 1912-13.)

Second semester; T.Th., 10:00; 24 W.

7. School Administration and Supervision. (2 or 3 Hrs.) This course is a continuation of course six and makes a study of the following topics: business and educational administration of schools, the school system and the school, the functions of the superintendent and of the principal, the improvement of teachers and teaching, the teachers' meeting, institutes and associations, lesson plans, progress books and reports, the program of studies in elementary and in secondary schools, school government and pupil government, the selection of books and the use of libraries, estimating teaching and the standard of school work, etc.

Second semester; T.Th., 10:00; 24 W.

8. Foreign School Systems. (3 Hrs.) The purpose of this course is to make a comparative study of the school systems of France and Germany, together with special features of other continental systems. The practical problems will be examined from the standpoint of American education.

Second semester; hours to be arranged; 24 W.

9. School Systems, British and American. (3 Hrs.) This course deals with the development and present status of education in England, Scotland, Canada, and the United States. The practical workings of the systems will be emphasized. (Omitted 1912-13.)

First semester; hours to be arranged; 24 W.

Note: Courses 8 and 9 will not be given unless the number of students desiring them is considered sufficient by the instructor in charge.

10. The Principles and Art of Teaching. (2 Hrs.) Required of all students who are candidates for recommendation for teachers' certificates. The aim of this course is to find a scientific method of learning and teaching and to determine the essential elements of teaching. Students will formulate and discuss lesson plans, do observation work, and teach regular classes, observe, so far as conditions will permit, lessons given by regular teachers, and report the same in class. Prerequisites: Education 12 or 17, and Education 4 and 5.

Second semester; T.Th., 11:00; 24 W.

11. Criticism and Supervision of Instruction. (2 or 3 Hrs.) This course is planned for teachers, supervisors, principals, and superintendents of schools. It will make an intensive study and application of some fundamental principles of education in both method and program of studies. Lessons will be planned and then taught with a class of pupils in the public schools of Morgantown. The lessons thus taught will be discussed in conference. The course will afford an opportunity for observation of lessons, practice teaching, and the supervision of instruction.

First semester; T.Th., hour to be arranged; 24 W.

12. Psychology in Learning and Teaching. (3 Hrs.) This course will present the principles that control rational learning and successful teaching as far as such principles may be derived from psychological laws. A number of psychological topics—the senses, sensation, perception, memory, imagination, reason, association of ideas, apperception, interest and attention, mental development, will habit, and character—will be studied.

Second semester; M.W.F., 8:00; 24 W.

13. Seminar. (3 Hrs.) The program of studies in elementary school.

First semester; T.Th., hours to be arranged; 24 W.

14. Seminar. (3 Hrs.) High schools and secondary education.

First semester: T. Th. Hours to be arranged; 24 W.

Note: Courses 13 and 14 will not both be given in the same year.

15. Seminar. (2 Hrs.) The rural school—its function; program of studies; state, county, and district supervision.

Second semester; T.Th., 8:00; 24 W.

16. Agricultural Education. (2 Hrs.) Candidates for recommendation for a teacher's certificate who are registered in the College of Agriculture must take this course in place of course 10 in their senior year. (See announcements of College of Agriculture, page 170.) Nature study and agriculture in the elementary and secondary schools. Organization of programs of studies and the principles and methods of teaching. Observation of elementary and secondary classes in nature study and agriculture. Lectures and recitations, reading of literature, and practical teaching.

Second semester: T. Th., Professor ————, 11:00; 27 M.

17. Principles of Study. (3 Hrs.) Primarily for freshmen and sophomores. This course aims to present the principles of economic and successful study in such a manner as to aid college students in their studies as well as teachers in directing the study of the pupils in school. The function and relation of observing, thinking, reasoning, and memorizing in study will be emphasized.

First semester; M. W. F., 8:00; 24 W.

ENGLISH

Professor ARMSTRONG, Professor COX, Professor BARBE, Professor NEIL, Associate Professor SMITH, and Assistant Professor JOHNSON.

Rhetoric

A. English. A four-hour course for which no college credit is given intended primarily for students who have entered with a condition in English or who have not made a satisfactory record in the courses regularly required of freshmen. A thorough survey and review of elementary rhetoric with frequent themes and other exercises in composition; reading and study of several representative English classics.

First semester; M. T. Th. F. 10:00; Professor JOHNSON, 10 M.

B. English. A continuation of course A. No college credit.

Second semester; M. T. Th. F., 10:00; Professor JOHNSON, 10 M.

1. Composition and Rhetoric. (3 Hrs.) Primarily for freshmen. Required of all candidates for the bachelor's degrees in all the colleges. Two themes weekly, conferences, recitations on textbook, class

criticism of written exercises, lectures. This course is designed to be taken in conjunction with English 26.

First semester; section 1 (Open only to students in the College of Engineering), M. W. Th., 8:00; Professor JOHNSON.

Section 2 (Open only to students in the College of Engineering), T. W. F., 8:00; Professor JOHNSON, 10 M.

Section 3; M. W. F., 9:00; Professor SMITH, 13 W.

Section 4; M. W. F., 9:00; Professor BARBE, L.

Section 5; M. W. F., 11:00; Professor SMITH, 13 W.

Section 6; M. W. F., 11:00; Professor BARBE, L.

Second semester; M., T., Th., 10:00; Professor COX, 32 W.

2. Composition and Rhetoric. (3 Hrs.) Primarily for freshmen. Required of all candidates for the bachelor's degrees in all the colleges. A continuation of course 1 with more attention to rules and principles. Two themes weekly; study of prose masterpieces as models of style and as material for themes; conferences, recitations, class criticism of written exercises, lectures.

Second semester; section 1; (Open only to students in the College of Engineering); M. W. Th., 8:00; Professor JOHNSON, 10 M.

Section 2 (Open only to students in the College of Engineering); T. W. F., 8:00; Professor JOHNSON, 10 M.

Section 3; M. W. F., 9:00; Professor SMITH, 13 W.

Section 4; M. W. F., 9:00; Professor JOHNSON, 10 M.

Section 5; M. W. F., 11:00; Professor BARBE, L.

Section 6; M. W. F., 11:00; Professor SMITH, 13 W.

3. Exposition. (2 Hrs.) Study of principles; analysis of masterpieces of exposition, both literary and scientific; themes.

First semester; T. Th., 9:00; Professor JOHNSON, 10 M.

4. Argumentation. (2 Hrs.) A study of general principles and of specimens; outlines and exercises.

Second semester; T. Th., 9:00; Professor JOHNSON, 10 M.

5. Themes. (3 Hrs.) An advanced course. Two or three themes are required weekly.

First semester: M. W. F., 11:00; Professor JOHNSON, 10 M.

6. Description and Narration. (3 Hrs.) A study of general principles with exercises.

Second semester, M. T. Th., 10:00; Professor SMITH, 13 W.

7. The Essay. (2 Hrs.) Study of the principles underlying the structure of the essay, with constant practice in their application.

Second semester: T. Th., 11:00; Professor SMITH, 13 W.

8. The Short Story (3 Hrs.) Study of the short-story as a form of literary expression, with the object of writing original short stories; constant practice in writing.

Second semester; M. W. F., 9:00; Professor BARBE, L.

9. Style. (2 Hrs.) A study of the principles and elements of style; practice to develop an artistic sense in the writing of English prose.

First semester; T. Th., 11:00; Professor SMITH, 13 W.

10. The Letter. (3 Hrs.) Some great writers seen in their letters. A study of their use of this form of composition. Practice in writing.

First semester; M. T. Th., 10:00; Professor SMITH, 13 W.

English Language and Literature

The aims of this division of English are; (a) a scientific knowledge of the origin and development of the English language; (b) a general acquaintance with English literature; (c) a specific knowledge of certain great authors, periods, and movements in English literature.

20. Old English. (3 Hrs.) Not open to freshmen. Required of all students who make English their major. Bright's Anglo-Saxon Reader; the essentials of Anglo-Saxon grammar; translations.

First semester; M. W. F., 8:00; Professor COX, 32 W.

21. Old English. Beowulf. (3 Hrs.) Translation, with due attention to text, meter, literary history, etc. Prerequisite, English 20.

Second semester; M. W. F., 8:00; Professor COX, 32 W.

22. Early Middle English. (2 Hrs.) Changes in the language. Critical reading of early middle English texts. (Omitted in 1912-13).

23. The English Language. (2 Hrs.) This course presents a general survey of the history of the English language. It will include a study of the sources of our vocabulary; the growth of the literary language; slang and legitimate speech; euphemism; folk-etymology; transference of meaning; the romance of words.

First semester, T. Th., 8:00; Professor COX, 32 W.

24. Chaucer. The Canterbury Tales. (3 Hrs.) Required of all students who make English their major. During the first part of the semester the work will be chiefly linguistic, with interpretation of passages. The latter part of the semester will be devoted to a somewhat rapid reading, with such consideration of form, sources, etc., as are necessary to a clear understanding of what is read.

Second semester; M. W. F., 9:00; Professor COX, 32 W.

25. Shakespeare. (4 Hrs.) One course in Shakespeare is required of all who make English their major, course 25 or course 28. A critical study of four of Shakespeare's plays: Othello, Twelfth Night, Macbeth, and the Winter's Tale. Special attention will be given to exact interpretation and to those peculiarities of language in which Shakespearean usage differs from our own.

First semester; M. T. Th. F., 10:00; Professor Cox, 32 W.

26. General Survey of English Literature. (2 Hrs.) Primarily for freshmen. Required of candidates for degrees. This course includes a historical view of English literature from its beginnings to the eighteenth century, and a close, critical study of a few classics from each of the great periods of literary development. The schedule is so arranged that this course can be taken in connection with English 1, in order to make up the five hours of freshman English required in the first semester.

First semester: sect. 1; T. Th., 9:00; Professor Cox, 32 W.
section 2: T. Th., 11:00; Professor ARMSTRONG, 31 W.

27. General Survey of English Literature. (2 Hrs.) Primarily for freshmen. Required of candidates for degrees. A continuation of English 26. The course is a survey of English literature in the eighteenth and nineteenth centuries. Prerequisite: English 1. The schedule is so arranged that this course can be taken in connection with English 2, in order to make up the five hours of freshman English required in the second semester.

Second semester: sect. 1: T. Th., 9:00; Professor ARMSTRONG, 31 W.
section 2; T. Th., 11:00; Professor BARBE, L.

28. Shakespeare. (4 Hrs.) One course in Shakespeare is required of all who make English their major, course 25 or course 28. One play will be studied closely and critically, and a number of others will be read with attention to characters, plot development, and general literary interpretation.

Second semester: M. T. Th. F., 10:00; Professor ARMSTRONG, 31 W.

29. Milton. (2 Hrs.) This course will consider Milton's poems and the Areopagitica. Interpretation of passages; consideration of forms, sources, style, etc.; lectures. (Omitted in 1912-13).

Second semester: T. Th., 8:00; Professor Cox. 32 W.

30. The Elizabethan Period. (2 Hrs.) From Tottel's Miscellany to the death of Spenser (1557-1599). The authors studied are Wyatt, Surrey, Ascham, Lyly, Sidney, Marlowe, and Spenser. Special attention will be given to Spenser.

Second semester: T. Th., 8:00; Professor Cox, 32 W.

31. The Queen Anne Period. (3 Hrs.) The course will deal with those writers who are specially representative of the classical spirit in English literature. The authors studied are Dryden, Swift, Addison, Steele, DeFoe, Pope, and Gay. (Omitted in 1912-13).

First semester: M. W. F., 11:00; Professor COX, 32 W.

32. English Literature. (3 Hrs.) From the death of Swift to the publication of the Lyrical Ballads (1745-1798). The authors studied are Gray, Collins, Johnson, Goldsmith, Cowper, Sheridan, Burke, Burns, and Blake; some attention to lesser authors.

First semester: M. W. F., 8:00; Professor BARBE, L.

33. English Literature. (3 Hrs.) From the publication of the Lyrical Ballads to the death of Scott (1798-1832). The authors studied are Wordsworth, Byron, Shelley, Keats, and Scott.

Second semester: M. W. F., 9:00; Professor ARMSTRONG, 31 W.

34. English Literature. (3 Hrs.) From the death of Scott to the death of Tennyson (1832-1892)—the poets. The chief authors studied are Tennyson, Browning, Arnold, Swinburne, Rossetti and Morris. (Omitted in 1912-13).

Second semester: M. W. F., 9:00; Professor ARMSTRONG. 31 W.

35. English Literature. (3 Hrs.) Prose writers since 1832. The chief authors studied are Carlyle, Ruskin, Dickens, Thackeray, George Eliot, and Stevenson.

First semester: M. W. F., 11:00; Professor ARMSTRONG, 31 W.

36. The English Old Testament. (4 Hrs.) Required of all students who make English their major. A study of the Old Testament in English as literature; discussion of its literary forms and interpretation of some of its masterpieces.

First semester: M. T. Th., F., 10:00; Professor ARMSTRONG, 31 W.

37. The English New Testament. (2 Hrs.) A study of the New Testament in English as literature. All the books will be read and a few studied with attention to literary form and interpretation. (Omitted in 1912-13).

Second semester: T. Th., 11:00; Professor ARMSTRONG, 31 W.

38. The Short Story. (2 Hrs.) The short story as a form of literature. A study of its development and some of its types from Poe to the present time.

First semester: T. Th., 9:00; Professor ARMSTRONG, 31 W.

39. American Literature. (3 Hrs.) A brief outline of its historical development and a study of selected works of representative authors.

First semester: M. W. F., 9:00; Professor ARMSTRONG, 31 W.

40. The Novel. (3 Hrs.) The study in this course will include the historical development of the novel; its significance; relation to modern life; types; tendencies; reading of novels, reports; lectures.

First semester: M. W. F., 11:00; Professor COX, 32 W.

41. Emerson. (3 Hrs.) A study of Emerson's prose and poetry.

Second semester: M. T. Th., 10:00; Professor BARBE, L.

42. English Literature. (3 Hrs.) Study of an author. The entire production or the most important work of some selected author will be studied to gain a complete view. The author to be studied in 1912-13 is Nathaniel Hawthorne.

Second semester: M. W. F., 8:00; Professor ARMSTRONG, 31 W.

43. Types of American Fiction. (2 Hrs.) A study of a few examples of the main types of American fiction.

Second semester: T. Th., 11:00; Professor ARMSTRONG, 31 W.

44. Nature Study in the Poets. Seminar. (2 Hrs.) Lectures based on Wordsworth, Bryant, and Lowell. Special authors are assigned to members of the class for study, interpretation, and criticism; reports; discussions.

Second semester: T. Th., 11:00; Professor COX, 32 W.

45. Literature in the Grades and the High School. (3 Hrs.) Intended especially for superintendents, principals, and teachers, but elective for students in all departments of the University. The course deals with the principles of literary criticism; application of tests; story-telling; general and special methods of presentation; the tributaries of the literary stream; courses of study; bibliography.

Second semester: M. W. F., 11:00; Professor COX, 32 W.

46. A Study of Poetry. (2 Hrs.) A discussion of metrical and rhythmical forms and of theories of English verse; the essential qualities and historical development of English poetry. The course will include a study of typical poems of the several periods to illustrate forms, principles, and theories.

First semester: T. Th., 11:00; Professor BARBE, L.

47. Wordsworth. (3 Hrs.) A study of the poetry of Wordsworth. (Omitted in 1912-13).

Second semester: M. T. Th., 10:00; Professor BARBE, L.

Oratory and Elocution

Requirements for Certificates. Students applying for a certificate in elocution must have reached full senior standing in the College of Arts and Sciences of this University, or in some college of equal grade; all class courses in elocution shall have been completed and such private lessons taken as the individual need of the student may have required.

61. The Psychology of Speech. (3 Hrs.) Required of all students who make English their major. A practical study of the principles of psychology as employed in the development of imagination, conception, memory, and emotion for speech.

First semester: M., W., F., 11:00; Professor NEIL, 14 M.

62. The Psychology of Speech. (3 Hrs.) Continuation of Course 61. An application of the principles of psychology to the development of voice and action in speech. This course is designed to give the student an effective and unconscious use of the fundamental modes of emphasis: pause, change of pitch, inflection, subordination, movement, tone-texture, and touch. Prerequisite: Course 61.

Second semester: M., W., F., 11:00; Professor NEIL, 14 M.

63. Literary Analysis, Synthesis and Rendition. (2 Hrs.) Designed as supplementary study for students who have completed Courses 61 and 62. An analysis of all the psychological elements entering into a limited number of short classics from English literature; a synthesis of these elements into original thinking and feeling; and the training of this thought and feeling into effective delivery of the selections studied. Prerequisites: Courses 61 and 62.

First semester: Tu., Th., 11:00; Professor NEIL, 14 M.

64. The History of Oratory. (2 Hrs.) A study of the sources, characteristics, and results of the great periods of oratory. A study of the individual work and worth of the most noted orators. Extemporaneous reports on these subjects by the students.

First semester: Tu., Th., 9:00; Professor NEIL, 14 M.

65. Original Orations. (2 Hrs.) Designed to follow Course 64 and to give the student thorough fundamental training in writing and presenting a formal speech. A study of the sources of clearness, elegance, force and persuasion; development of these in the individual student.

Second semester: Tu. Th., 9:00; Professor NEIL, 14 M.

66. Argumentation and Debate. (2 Hrs.) Required of all candidates for the LL.B. degree. A study of the laws of argumentation; training in the statement and analysis of subjects for debate; training

in gathering and tabulating material for proof; training in construction of briefs and writing of arguments; oral presentation of short arguments and debates.

First semester: Tu., Th., 10:00; Professor NEIL, 14 M.

67. Advanced Argumentation and Debate. (2 Hrs.) Continuation of Course 66. Required of all candidates for the LL.B. degree. Critical study of noted specimens of argumentation; research work on live questions of the day; writing of briefs and arguments on these questions; extemporaneous speeches and debates.

Second semester: Tu., Th., 10:00; Professor NEIL, 14 M.

68. Dramatic Study of Shakespeare. (2 Hrs.) A psychological analysis of the setting, the characters, the plot and the purpose of one of Shakespeare's plays; synthesis of these elements into simple and effective acting; memoriter presentation of the play studied. Prerequisites: Courses 61 and 62. (Omitted, 1912-13.)

First semester: Tu., Th., 11:00; Professor NEIL, 14 M.

69. Vocal Interpretation of the Bible. (2 Hrs.) Designed for advanced students in literature. The object of this course is to teach the student the literary worth of the Bible, its narrative, didactic, allegorical, dramatic, oratorical, lyric, and epic spirit. This is accomplished through psychological study and vocal rendition of Biblical selections. Prerequisites: Courses 61 and 62.

Second semester: Tu., Th., 11:00; Professor NEIL, 14 M.

Private Lessons

In addition to the class work in elocution, a thorough and comprehensive course of individual instruction is offered. Each lesson occupies a full one-hour period, and is devoted to a single individual. This branch of the work is indispensable to all who wish to follow any line of public speaking. The instruction may be taken either as single lessons or in courses of one semester each.

Hours Open for Private Pupils:

First semester: M., W., F., 9:00; M., F., 10:00.

Second semester: M., W., F., 9:00; M., F., 10:00.

Tuition for Private Lessons:

Single Lesson $2.50

One Semester, one lesson a week $30.00

One Semester, two lessons a week $50.00

All class work in elocution and oratory is free to students enrolled in the University.

ENTOMOLOGY

1. General Entomology. (4 Hrs.) A regular elective course for students in the College of Arts and Sciences. For detailed description of this course see announcements of the College of Agriculture, page 175. Prerequisite: Zoology 1.

Second semester; T.Th., 10:00; laboratory, Th. F., 2:00; A.

FARM MANAGEMENT

1. Farm Management. (3 Hrs.) This course is primarily designed for students in Agriculture, but credit will also be given for it in the College of Arts and Sciences. (See page 57.) For a detailed description of the course see announcements of the College of Agriculture, page 176. Prerequisite: Agronomy 1 and 2.

Second semester; M.W.F., 8:00.

2. Rural Economics. (3 Hrs.) A regular elective course for students in the College of Arts and Sciences. The study of economics as related to all phases of rural life. See announcements of College of Agriculture, page 176.

Second semester; T.Th.S., 8:00.

FINE ARTS

Associate Professor LEONARD

Credit will be given in the College of Arts and Sciences for not more than fifteen hours in fine arts. In case credit is asked for the maximum number of hours these must include the courses in the history of art.

1. Elementary Drawing. (5 Hrs.) The historic forms of art and their development. Lectures, with collateral reading and practice in drawing.

First semester; 9:00; L.

2. Elementary Drawing. (5 Hrs.) A continuation of course 1.

Second semester; 9:00; L.

16. Elementary Drawing. (2 Hrs.) For students in the College of Agriculture only. The study of form, proportion, light and shade, and composition with a view to the development of individual opinion, judgment, and the power of expressing ideas in shapes and forms. An acquaintance with some works of art will be encouraged.

First semester; T.Th., 8 to 11:00; L.

4. Advanced Drawing. (5 Hrs.) Historic periods of architecture, sculpture and painting. Lectures, with collateral reading and practice in drawing.

First semester; M.T.Th.F., 10:00, and one hour to be arranged; L.

5. Advanced Drawing. (5 Hrs.) A continuation of course 4.

Second semester; M.T.Th.F., 10:00, and one hour to be arranged; L.

7. The History of Greek Art. (3 Hrs.) With a consideration of the arts of Egypt, Assyria, and Rome, in their relation to Greek art.

First semester; M.W.F., 8:00; L.

8. The History of Mediæval and Modern Art. (3 Hrs.) With special consideration of the Renaissance period. Courses 7 and 8 are not open for freshmen.

Second semester: M.W.F., 8:00; L.

17. Public School Drawing. (5 Hrs.) For teachers who desire to become familiar with the methods and mediums employed in public school work.

Second semester, 11:00; L.

FRENCH

For announcement of courses in this subject see Romance Languages, page 114.

GEOLOGY AND MINERALOGY

Professor BROWN

The equipment for purposes of illustrative teaching in this subject consists of many thousands of fossils, casts, and models, a good collection of minerals, specimens of all the important building stones, and Ward's College Collection in Paleontology, showing the advancement from the early forms of life to those of the present time. The University is situated in the midst of a great coal-producing region, within five miles of the western fold of the Appalachian mountains, and oil and gas wells are but a short distance away. The natural facilities for the duty of geology are unsurpassed.

6. General Mineralogy. (5 Hrs.) Designed for freshmen and sophomores. Required of students in mining engineering. This course treats of the principles of crystallography, physical and chemical properties, formation, uses and determination of the more important minerals. Textbook, Moses and Parsons Mineralogy. Prerequisites, trigonometry and some knowledge of chemistry and physics.

First semester; 8:00; 31 S.

4. Economic Geology. (3 Hrs.) Designed for Juniors and Seniors. Required of students in civil and mining engineering. This course treats of the occurrence and distribution of the non-metallic minerals, with attention to the geology of coal, oil and gas. Textbook, Ries Economic Geology. Prerequisites, Geology 2 or 6.

Second semester; M.W.F., 11:00; 31 S.

2. General Geology. (3 Hrs.) Designed for sophomores and juniors. Required of students in civil and mining engineering. This course treats of surface features, stratigraphy, and structural geology. Numerous excursions will be taken and those who take them will receive an additional credit of one hour. Textbook, Chamberlain and Salisbury. Prerequisite: some knowledge of chemistry.

First semester; M.W.F., 11:00; 30 S.

8. Geology of West Virginia. (2 Hrs.) Designed for seniors and especially for teachers in high schools. This course is a physical history of the state and an account of its economic resources. Prerequisite, Geology 2.

First semester, T.Th., 11:00; 30 S.

7. Determinative Mineralogy. (5 Hrs.) Continuation of course 6. Required of students in mining engineering. This course consists of work in determining minerals and precise measurements with reflecting goniometer. Textbook, Moses and Parsons. Prerequisites, some knowledge of chemistry and physics.

Second semester: 8:00; 31 S.

5. Economic Geology. (3 Hrs.) Designed for juniors and seniors. A continuation of course 4. This course gives an account of the occurrence of ore deposits and the distribution of metallic minerals. Textbook, Ries. Prerequisites, Geology 2, or Mineralogy.

Second semester; M.T.F., 10:00; 31 S.

3. General Palæontology. (3 Hrs.) Designed for juniors and seniors. A continuation of Geology 2. This course gives an account of the progress and development of plants and animals through the different ages of the earth. Textbook, Chamberlain and Salisbury. Prerequisites, Geology 2 and some knowledge of botany and zoology.

First semester; M.W.F., 10:00; 30 S.

9. History of Geology. (2 Hrs.) Designed for seniors and teachers. Largely a lecture course, showing the development of the sciences of geography and geology and discussing the discoveries and lives of its founders.

Second semester; T.Th., 11:00; 30 S.

10. Petrology and Building Stones. (2 Hrs.) A study of rock with about 400 specimens of the various types from many countries. Adapted to the needs of engineers and architects.

Second semester; T.Th., 11:00; 30 S.

Note:—Courses 9 and 10 will not both be given in any one year.

GERMANIC LANGUAGES AND LITERATURES

Professor TRUSCOTT and Mr. KOELZ

1. Elementary German. (5 Hrs.) Pronunciation, grammar, reading of simple prose. Vos' or Thomas' Grammar; Super's Reader; Im Vaterland.

First semester: section one, 9:00; Mr. KOELZ, 19 W.
section two, 10:00; Mr. KOELZ, 19 W.
Second semester: 11:00; Professor TRUSCOTT, 18 W.

2. Elementary German. (5 Hrs.) Continuation of course 1. Reading, dictation, elementary composition. Grimm's Maerchen; Immensee; Hoeher als die Kirche; L'Arrabiata.

First semester: 11:00; Professor TRUSCOTT, 18 W.
Second semester: Section 1, 9:00; Mr. KOELZ, 19 W.
Section 2, 10:00; Mr. KOELZ, 19 W.

3. German Prose and Composition. (5 Hrs.) Rapid reading of prose by modern authors. Translation of English into German; grammar; dictation. Pope's Composition; Jagemann's German Syntax.

First semester: 8:00; Mr. KOELZ, 19 W.

4. German Poetry and Composition. (5 Hrs.) One long poem and one drama; well known short poems; Hermann und Dorethea; Die Jungfrau von Orleans; Klenze's Deutsche Gedichte. The work in composition will be a continuation of that in course 3.

Second semester: 8:00; Mr. KOELZ, 19 W.

5. Germany and the Germans. (3 Hrs.) A course of general information about the country and the people. Kostyak's Deutschland; Lodemann's Germany and the Germans.

First semester: M. W. F., 8:00; Professor TRUSCOTT, 18 W.

6. Advanced Composition. (2 Hrs.) Translation; dictation. Bronson's Colloquial German; Jagemann's Prose Composition.

First semester: T. Th., 8:00; Professor TRUSCOTT, 18 W.

7. Heine and Lyric Poetry. (3 Hrs.) Reading from Heine's prose and poetry. Lyric poems by other authors.
Second semester: M. W. F., 8:00; Professor TRUSCOTT, 18 W.

8. Advanced Composition. (2 Hrs.) A continuation of course 6.
Second semester: T. Th., 8:00; Professor TRUSCOTT, 18 W.

9. Schiller. (3 Hrs.) Study of his life. Gedichte; Don Carlos; Wallenstein; Wilhelm Tell.
First semester: M. W. F., 9:00; Professor TRUSCOTT, 18 W.

10. Goethe. (3 Hrs.) Study of his life. Gedichte; Werther's Leiden; Torquato Tasso; Faust, Part 1.
Second semester: M. W. F., 9:00; Professor TRUSCOTT, 18 W.

11. History of German Literature. (3 Hrs.) The history of the literature to 1748; reading and discussion of works representative of the most important authors and periods. As a hand-book Kluge's Geschichte der Deutschen Nationallitteratur will be used. (Omitted 1912-13.)
First semester: M. W. F., 10:00; Professor TRUSCOTT, 18 W.

12. History of German Literature. (3 Hrs.) A continuation of course 11. The history of the literature from 1748 to 1900. (Omitted 1912-1913.)
Second semester: M. W. F., 10:00; Professor TRUSCOTT, 18 W.

13. Lessing. (3 Hrs.) Study of his life. Minna von Barnhelm; Emilia Galotti; Nathan der Weise. Laocoon. (Omitted 1912-1913.)
First semester: hours to be arranged; Professor TRUSCOTT, 18 W.

15. Modern German Drama. (2 Hrs.) A reading course. The classical works of Goethe and Schiller not considered. Prerequisites, courses 1, 2, 3, 4, and 5. (Omitted 1912-1913.)
First semester: T. Th., 9:00; Professor TRUSCOTT, 18 W.

16. Modern German Drama. (2 Hrs.) A continuation of course 15. (Omitted 1912-1913.)
Second semester: T. Th., 9:00; Professor TRUSCOTT, 18 W.

17. German Novel and Short Story. (2 Hrs.) A reading course in nineteenth century prose. Prerequisites, courses 1, 2, 3, 4, and 5.
First semester: T. Th., 9:00; Professor TRUSCOTT, 18 W.

18. German Novel and Short Story. (2 Hrs.) A continuation of course 17.
Second semester: T. Th., 9:00; Profesor TRUSCOTT, 18 W.

19. Scientific German. (3 Hrs.) Intended for students in the scientific departments. Prerequisites, courses 1, 2, and 3.
Second semester: M. W. F., 11:00; Mr. KOELZ, 19 W.

20. Newspaper German. (3 Hrs.) Newspaper and magazine articles on various subjects. Prehn's Journalistic German; New Yorker Staatszeitung. Prerequisites, courses 1, 2, and 3. (Omitted 1912-1913.)
Second semester: M. W. F., 11:00; Mr. KOELZ, 19 W.

21. Special Topics in German Grammar. (1 Hr.) For students who intend to teach German. Discussion of text-books. Registration conditional with the instructor.
Second semester: M. 10:00; Professor TRUSCOTT, 18 W.

GREEK

Professor BISHOP

1. Elementary Greek. (5 Hrs.) White's Beginning Book.
First semester, 11:00; 23 W.

2. Elementary Greek. (5 Hrs.) White's Beginning Book, continued; Xenophon's Anabasis.
Second semester, 11:00; 23 W.

3. Xenophon's Anabasis. (4 Hrs.) Goodwin's Grammar; original exercises based on textbook.
First semester, M.T.Th.F., 10:00; 23 W.

4. Lysias' Orations—Homer's Iliad. (4 Hrs.) Goodwin's Grammar; exercises based on Lysias; original exercises.
Second semester, M.T.Th.F., 10:00; 23 W.

5. Attic Orations. (4 Hrs.) Jebb's Selections from the Attic Orations; Goodwin's Grammar; exercises based on selections read.
First semester, hours to be arranged; 23 W.

6. Homer's Odyssey. (4 Hrs.) Goodwin's and Monro's Grammars; original exercises.
Second semester, hours to be arranged; 23 W.

Note: Courses 5 and 6 constitute an elaboration of oratory and epic, the two constituent parts of Course 4.

7. Plato's Apology, Krito, and Euthyphro. (3 Hrs.) Goodwin's Grammar; original exercises; Fowler's History of the Greek Literature.
First semester, M.W.F., 9:00; 23 W.

8. Demosthenes "On the Crown." (3 Hrs.) Goodwin's Grammar; original exercises; Fowler's History of the Greek Literature.
Second semester, M.W.F., 9:00; 23 W.

9. Xenophon's Memorabilia. (3 Hrs.) Goodwin's Grammar; originay exercises; Fowler's History of Greek Literature.
First semester, M.W.F., 9:00; 23 W.

10. Herodctus. (3 Hrs.) Goodwin's Grammar; original exercises.
Second semester, M.W.F., 9:00; 23 W.

Note: Courses 9 and 10 alternate with courses 7 and 8 as circumstances may direct.

11. Thucydides. (3 Hrs.) Goodwin's Moods and Tenses; Gildersleeve's Syntax; Fowler's History of Greek Literature for reference.
First semester, hours to be arranged; 23 W.

12. Aeschylus Prometheus Bound (3 Hrs.) Goodwin's Moods and Tenses; Gildersleeve's Syntax.
Second semester, hours to be arranged; 23 W.

13. Sophocles' Oedipus Rex. (3 Hrs.) Goodwin's Moods and Tenses; Gildersleeve's Syntax.
First semester, hours to be arranged; 23 W.

14. Euripides' Ion. (3 Hrs.) Goodwin's Moods and Tenses; Gildersleeve's Syntax.
Second semester, hours to be arranged; 23 W.

21. Greek Literature in Translation. (2 Hrs.) Masterpieces of Greek Literature; mythology; Capps' Homer to Theocritus.
First semester, T.Th., 9:00; 23 W.

22. Greek Life and Religion. (2 Hrs.) Greek religion; home life of the Greeks; Greek archaeology.
Second semester, T.Th., 9:00; 23 W.

HISTORY AND POLITICAL SCIENCE

Professor CALLAHAN and Professor CHITWOOD

The work offered in this department includes: (1) Continental European History, (2) English History, (3) American History, and (4) Political Science.

Instruction is given by lectures, text-book work, assigned collateral readings; preparation of papers, syllabi, and maps; special reports, recitations, and informal conferences.

Students are encouraged to observe and to read contemporary history and politics.

An association of those who are especially interested in the work of the department meets fortnightly for part of the year to hear the discussion of special topics and current problems.

An afternoon hour is designated for conferences and for direction of library work.

Continental European History

Professor Chitwood

Students who select continental European history as their principal study are advised to take at least one year in French or German, in the early part of the University course.

Among the books of reference, which every student will often need to consult, are Ploetz's Epitome of Universal History and some good historical atlas, such as Putzger's Historischer Schul-Atlas.

9. History of Oriental Civilization. (3 Hrs.) This is a general culture course, and a fitting introduction to the study of history. It begins with a survey of primitive society and traces the rise and development of human institutions. It directs especial attention to the early institutional history of China, Japan, India, Chaldea, Assyria, and Egypt and gives a survey of their contributions to civilization. (Omitted in 1912-13.)

First semester: M. W. F., 11:00; Professor Chitwood, 29 W.

10. History of Greece. (3 Hrs.) In this course the central idea is the development of civilized life as expressed in art, literature, and philosophy, in personal character and social customs, as well as in political ideas and institutions. An attempt will be made to gain an appreciation of what the Greeks were and what they gave to civilization.

First semester: M. W. F., 8:00; Professor Chitwood, 29 W.

11. History of Rome. (3 Hrs.) The aim of this course is to trace the development of Roman institutions, character, and civilization, to explain the genius of the Roman people for organization and government, and to call attention to the contributions of Rome to modern civilization.

Second semester: M. W. F., 8:00; Professor Chitwood, 29 W.

12. Mediæval History. (4 Hrs.) Primarily for Freshmen. This course begins with the period of institutional chaos following the

breakup of the Roman empire, and ends with the rise of modern states. Special attention is devoted to the three prime factors in the history of the middle ages,—the surviving civilization of Rome, the Christian church, and the German people. Political history, except in the case of France, is subordinated to the study of social and economic institutions—the church, feudalism, the crusades, schools and learning, commerce, and the rise of cities.

First semester: M. T. Th. F., 10:00; Professor CHITWOOD, 29 W.

13. Modern European History. (4 Hrs.) Primarily for Freshmen. This course covers the Reformation and the religious wars, the revolt of the Netherlands and the rise of the Dutch republic, the rise of Prussia, the period of French ascendency, the revolutionary and Napoleonic eras, the period of reaction, the unification of Germany and Italy, and the progress of democracy in the nineteenth century.

Second semester: M. T. Th.. F., 10:00; Professor CHITWOOD, 29 W.

14. The Renaissance and the Reformation; 1300-1648. (3 Hrs.) A transition from mediaeval to modern history. The development of the forces of modern civilization. Beginning with the survey of the economics, political, and intellectual conditions at the close of the middle ages, this course gives the student general knowledge of the rise and decline of the papal hierarchy, the renaissance in Italy and Germany, the protestant revolution in the principal European states, the counter-reformation, and the religious wars to the Treaty of Westphalia.

First semester: M. W. F., 9:00; Professor CHITWOOD, 29 W.

15. Continental Europe in the Nineteenth Century. (3 Hrs.) This course is devoted to an intensive study of political and social conditions in the more important states of Europe during the last hundred years. Somewhat extended reading is required of students taking this course, and the results of this reading is presented in the form of papers and reports.

Second semester: M. W. F., 11:00; Professor CHITWOOD, 29 W.

16. Seminar in European History. (2 Hrs.) For advanced history students only.

First semester: T. Th., 11:00; Professor CHITWOOD, 29 W.

44. The French Revolution and the Napoleonic Era. (3 Hrs.) A survey of the facts of European History from 1648 to 1789, with emphasis on the causes of the French Revolution, and an intensive study of the great political, social and military movements from 1789 to 1815.

Second semester: M. W. F., 9:00; Professor CHITWOOD, 29 W.

45. Current European History. (2 Hrs.) A study of recent and current events in Europe and the East. Prerequisites, course 14 or its equivalent.

Second semester: T. Th., 11:00; Professor Chitwood, 29 W.

English History

Students will find it convenient to own Low and Pulling's Dictionary of English History and Gardiner's Atlas.

Courses 17 and 18 or 19 and 20 furnish a good foundation for the study of American history and law.

17. History of England to the Tudors. (3 Hrs.) A course in the general and institutional history of England. Special attention is given to political, economic, and social life and development; the more important subjects in constitutional history are considered, showing how England learned to govern herself.

First semester: M. T. Th., 10:00; Professor Callahan, 30 W.

18. History of England from the Tudors to the Present Time. (3 Hrs.) A continuation of course 17. The upbuilding of the British empire and adjustment to new conditions. The constitutional and religious struggles of the sixteenth and seventeenth centuries; economic and social changes; international relations; development of a sea power; struggle for colonial and commercial supremacy; and the formation of modern conditions and institutions.

Second semester: M. T. Th., 10:00; Professor Callahan, 30 W.

19. English Social and Industrial History. (3 Hrs.) A survey of the facts of social and industrial evolution and their relation to political history and the interpretation of present conditions; a study of the enlargement of English life and the growth of English institutions. (Omitted in 1911-12.)

First semester: M. W. F., 11:00; Professor Callahan, 30 W.

20. English Historical and Practical Politics: English Constitutional Law and History. (3 Hrs.) A seminar course arranged especially for advanced students in history who desire a suitable preparation for courses in American government and law. Prerequisite, a general outline knowledge of English history and course 17, 18 or 19.

First semester: T. Th., 11:00; Professor Callahan, 30 W.

American History

All students of American history should have Channing and Hart's Guide, and McCoun's Historical Geography of the United States.

21. American Colonial History (1492-1776). (2 Hrs.) European back-ground; economic and political conditions in Europe before the search for new trade routes; evolution of discovery and settlement; Spanish colonial problems, policy, and progress; growth of the English settlements into colonies; origin and development of American institutions; views of colonial, social, and economic life; French colonial policy; the conflict between the English and new France; relation of the colonies to England; adaptation of European civilization to American conditions; the separation of the colonies from England.

First semester: T. Th., 9:00; Professor CALLAHAN, 30 W.

22. The Formation of the Union: American Political History (1776-1829.) (3 Hrs.) The revolution, the critical period, the formation of the constitution, the organization of the government, the struggle for neutrality and the development of nationality, the expansion of the Union, and the triumph of democracy. Special attention is given to political and constitutional development and to international relations, but industrial and social growth is also treated.

First semester: M. W. F., 9:00; Professor CALLAHAN, 30 W.

23. Division and Reunion: American Political History Since 1829. (3 Hrs.) Economic questions and the slavery contest; the growth of sectional differences, culminating in the secession movement; the Civil War and its problems, the overthrow of the slave power, and readjustment; a brief survey of the political and social questions since the Civil War, and of the development of the resources of the country.

Second semester: M. W. F., 9:00; Professor CALLAHAN, 30 W.

In courses 21, 22, and 23, while special emphasis is laid on political and constitutional history, much attention is given to social and economic conditions.

26. History of American Diplomacy and Foreign Policy (1776-1909.) (2 Hrs.) A general survey of the negotiations, treaties, arbitrations, congresses, etc., to which the United States has been a party; the fundamental principles of American policy; a study of the most important phases of American international relations; America's influence on international law and diplomacy; the state department and its most distinguished secretaries.

Second semester: T. Th., 9:00; Professor CALLAHAN, 30 W.

29. American Social and Economic History. (3 Hrs.) The story of the economic achievements of the American people. A historical basis that is essential to the proper study of economics. Beginning with the exploration and settlement that led to colonization, the student traces the growth and expansion of manufactures, agriculture, commerce, transportation, population, and labor from the simple agricultural communities of the colonies to the complex industrial and commercial organization of to-day. He learns how to acquire the information which is a necessary preliminary for the solution of present day industrial, financial, and commercial problems.

Second semester: T. Th., 11:00; Professor Callahan, 30 W.

32. History of West Virginia. (2 Hrs.) A seminar course designed for juniors or seniors in history. Coöperative investigations in social, economic, political and constitutional development; state legislation is studied as far as possible from documentary material; considerable attention is given to railroad development and the growth of towns; an effort is made to collect historical material from different parts of the state.

First semester: F. 10:00; Professor Callahan, 30 W. and L.

34. Seminar in American History. (2 Hrs.) A research course supplemented by lectures. Exclusively for students taking history as their major. Among the subjects recently studied were the Monroe doctrine, relations of the United States with Spanish America, and the American Cuban policy. Students are required to take notes, to investigate assigned topics, and to become acquainted with the original materials that are accessible. Proper attention is given to scientific methods of historical research, construction, and interpretation. Theses in American history are prepared in connection with this work. (Omitted 1912-13.)

Second semester: F. 9:00; Professor Callahan, L.

The attention of students taking American History is invited to the announcements of the Bryan prize and the Tax Commission Prize on page 47.

Political Science

In all these courses, students should have a clear knowledge of the outlines of general history and especially of modern political history.

35. American Practical Politics: Government at Work. (2 Hrs.) A practical study of the actual workings of the government and politics of the United States, both state and national; the growth,

spirit, machinery, operations, and functions of the government; the relations, rights and duties of citizens; the policies of state on public questions and problems. Special attention is given to the realities of governments and institutions, and to the personal interest and personal action which underlie constitutions and statutes.

Open to students who have a familiar knowledge of the period covered by courses 22 and 23.

Second semester: T. Th., 8:00; Professor CALLAHAN, 30 W.

36. European Historical and Practical Politics. (2 Hrs.) A historical study of the development of the political institutions, constitutional governments, and parties of the leading countries of modern continental Europe. Special attention is given to recent European politics. Open to advanced students who have had thorough courses in European history, especially course 14.

First semester: T. Th., 8:00; Professor CHITWOOD, 29 W.

40. Municipal Government. (2 Hrs.) (Omitted 1912-13.)

42. Anglo-American Historical Jurisprudence. (2 Hrs.) A study of the sources and growth of law and the development of legal institutions in connection with social and political history. Adapted especially to advanced students of history who are preparing for the study of law. (Omitted in 1912-13.)

First semester: T. Th., 11:00; Professor CALLAHAN, 30 W.

43. International Law and Practice of Diplomacy. (2 Hrs.) Open to students with a knowledge of modern history, especially courses 22 and 23. (Omitted 1912-13.)

Second semester: T. Th., 9:00; Professor CALLAHAN, 30 W.

HOME ECONOMICS

Assistant Professor COLWELL

1. Selection and Preparation of Food. (5 Hrs.) A study of the chemical composition, relative physiological and economic value of the animal foods and their products; processes in the production of raw food material. Practical application is given of the methods by which heat is applied to the food material and a study of the effect of these methods upon the dietetic value of the food is made.

It is recommended that Chemistry 1 and 2 precede or parallel this course.

First semester, T.Th., 9:00; laboratory, M.W.F., 1:15; 2 W.

2. Selection and Preparation of Food. (5 Hrs.) Continuation of course 1. A study of the chemical composition and relative physi-

ological and economic value of the vegetable foods and their products; processes in the production of raw food material; principles of diet. Practical application of the methods by which heat is applied to the food material is given and a study is made of simple food combinations and their effect upon the dietetic value of the food. Prerequisite: Same as in course 1.

Second semester, T.Th., 9:00; laboratory, M.W.F., 1:15; 2 W.

3. Hygiene. (4 Hrs.) Open to all women students. The purpose of this course is to give a knowledge of the laws fundamental to normal health and its maintenance and such knowledge of the structure and function of the organs of the body as is fundamental to a knowledge of the laws controlling the maintenance of normal health and their application to the growing child and the adult in the school room and the home. Emphasis is laid upon the hygiene of the organs of digestion, excretion, sound, sight, exercise and clothing. Special assistance is given by other departments in the University.

First semester: M. T. Th. F., 11:00; 2 W.

4. Dietetics. (4 Hrs.) A study of digestion, absorption, assimilation of food constituents; methods of determining the food requirements; amount of food required for the nutrition of the normal adult at rest and at work; diet for infancy, youth, old age; special diets; cost of family dietaries. Prerequisite, courses 1 and 2.

First semester: M. W., 9:00; laboratory, T. Th., 1:15; 2 W.

5. The House. (2 Hrs.) A study of the house from the sanitary, economic and artistic point of view, including the following topics: location of the house; study of houses by means of the scorecard; study of house plans; designing of simple house plans for an estimated cost. Parallel Course, Mechanical Drawing 21.

First semester: T. Th., 10:00; 2 W.

6. The House. (2 Hrs.) Continuation of Course 5. A study of the administration of the affairs of the home; furnishing; division of income; household accounts. Prerequisite, Home Economics 5 and Mechanical Drawing 21. Parallel Course, Steam, Gas and Experimental Engineering 127.

Second semester: T. Th., 10:00; 2 W.

7. Domestic Science in Public Schools. (4 Hrs.) This course includes the following subjects: planning of the equipment; correlation with other subjects in the school; practice in planning courses. Prerequisite, Courses 1, 2, 4, 5, 6.

Second semester; M. T. Th. F., 11:00; 2 W.

8. Special Problems. (4 Hrs.) Open to juniors and seniors. Thesis course. This course is designed to give advanced work in foods and related home economics problems. Lectures, conferences, laboratory work. Prerequisite, Home Economics 1, 2, and 4, Chemistry 1 and 2, Botany 1 and 2.

Second semester: M. W., 9:00; Laboratory, T. Th., 1:15; 2 W.

11. Handwork. (3 Hrs.) Plain sewing; different stitches used in sewing are practically applied in the making of simple undergarments and in the problems of repair; use and care of the machine.

First semester: M. W. F., 1:15; — W.

12. Textiles and Dress. (3 Hrs.) Study of fibres and fabrics from the historic, economic and artistic aspect; problems of shrinkage and combination of material with special reference to problems of color and design in costumes; drafting and making of simple wash dresses.

Second semester: M. W. F., 1:15; — W.

HORTICULTURE

1. Plant Propagation. (3 Hrs.) This course is primarily designed for students of Agriculture, but credit will also be given for it in the College of Arts and Sciences. (See page 57.) For a detailed description of the course see announcements of the College of Agriculture on page 177.

Second semester: T. Th., 10:00; laboratory, T., 2:00; 27 M.

12. Evolution and Heredity. (3 Hrs.) An elective course for students in the College of Arts and Sciences. For a detailed description of this course see announcements of the College of Agriculture, page 179. Prerequisites, Horticulture 1, Botany 3 and 4, Zoology 1.

First semester; M. T., 10:00; laboratory, hours to be arranged; 27 M.

ITALIAN

For courses in this subject see under Romance Languages, page 117.

LATIN

Professor TROTTER and Professor HARE

Courses 1, 2, 3 and 4 may be offered for entrance or taken as college work. In addition to these 5 and 6 are required of candidates for the A.B. degree, unless Greek is substituted for part or all. Students offering two units for entrance will begin with 1; those offering three units will begin with 3, and those offering four units with 5.

Additional courses are required of those making Latin their major, depending on the amount offered for entrance. Students making Latin their major will also take History 10 and 11. (See page ——.)

1. Cicero. (3 Hrs.) Primarily for freshmen offering two units for entrance. Required of all candidates for the A.B. degree. The first three orations against Catiline are read. The work includes a thorough review of forms and syntax; careful translation, literal and free; grammatical constructions and idioms, and political history of the period at which the orations were delivered. Prerequisite, two units of high school Latin.

First semester: 8:00; Professor HARE, 12 W.

2. Cicero. (3 Hrs.) Continuation of course 1. The orations read are the fourth oration against Catiline, the oration for Archias, and the Manilian law. Prerequisite, Latin 1.

Second semester: 8:00; Professor HARE, 12 W.

3. Virgil. (4 Hrs.) Primarily for freshmen offering three units for entrance. Required of all candidates for the A.B. degree. The first three books of the Æneid are read. The work includes accurate translation, mythological and historical allusions, religious and social customs, grammatical constructions, and the metrical reading of the text. Composition once a week. Prerequisite, Latin 2.

First semester: 9:00; Professor HARE, 12 W.

4. Virgil. (4 Hrs.) Continuation of Course 3. Books four, five and six are read, and short papers on assigned topics suggested by the text are required. Composition once a week. Prerequisite, Latin 3.

Second semester: 9:00; Professor HARE, 12 W.

5. Cicero—De Senectute and De Amicitia, and Livy XXI; (5 Hrs). Reading and translation, review of grammar, study of assigned topics in Roman History and Philosophy. Open to students who have had the preceding or four units of high school Latin.

First semester: First section, 9:00; Professor TROTTER.
Second section, 11:00; Professor HARE.

6. Livy XXII, and Horace, Odes and Epodes. (5 Hrs.) Continuation of 5. Particular attention to the meters of Horace, his life and beliefs.

Second semester: First section, 9:00; Professor TROTTER.
Second section, 11:00; Professor HARE.

7. Cicero. De Officiis. (3 Hrs.) Rapid reading and study of Cicero's ethical teachings.

First semester: M. W. F., 8:00; Professor TROTTER.

8. Comedy. (3 Hrs.) Five or six plays of Plautus and Terence. Study of characters, development of plot, etc.
Second semester: M. W. F., 8:00; Professor TROTTER.

9. Teachers' Course in Latin. (2 Hrs.) Study of indirect discourse in Cæsar and Livy, and composition; discussion of questions pertaining to the teaching of Latin, etc. No credit will be allowed in this course until the following course is taken.
First semester: T. Th., 8:00; Professor TROTTER.

10. Teachers' Course in Latin. (2 Hrs.) Continuation of 9.
Second semester: T. Th., 8:00; Professor TROTTER.

11. Horace. Satires and Epistles. (4 Hrs.) Selected satires and epistles are read, with attention to Horace's personal life.
First semester: M. T. Th. F., 10:00; Professor TROTTER.

12. Roman Oratory. (4 Hrs.) Cicero's De Oratore and Tacitus's Dialogues de Oratoribus are read; preparation of the orator, his work and influence are discussed.
Second semester: M. T. Th. F., 10:00; Professor TROTTER.

13. Juvenal. (3 Hrs.) Satires, with study of contemporaneous history.
First semester: time to be arranged; Professor TROTTER.

14. Seneca. (3 Hrs.) Moral Essays with a study of his times. Coördinate with Philosophy 7.
Second semester: time to be arranged; Professor TROTTER.

15. Roman Rhetoric. (2 Hrs.) Quintilian's Institutions.
First semester: time to be arranged; Professor TROTTER.

16. Lucretius. (2 Hrs.) De Rerum Natura, with a study of his doctrines.
Second semester: time to be arranged; Professor TROTTER.

LAW

Credit will be given in the College of Arts and Sciences for fifteen hours in this subject given in the College of Law. See page 188.

LIBRARY SCIENCE

Mr. ARNETT.

1. Library Methods. (2 Hrs.) An introductory course for the purpose of acquainting students with the University Library and the

practice of library methods; instruction in the use of catalogues, indexes, and general reference books, and in elementary cataloguing.

First semester: T. Th., 8:00; L.

2. Library Methods. (2 Hrs.) Theory and practice of library methods, including classification, book selection and order work, binding and repair of books, loan desk, etc.

Second semester, T. Th., 8:00; L.

MATHEMATICS

Professor EIESLAND and Miss BUCHANAN

Courses 9, 10, 11, 12, are intended for those who choose mathematics as a major subject. Courses 10, 11, and 12 are recommended for those whose major is physics.

1. Algebra. A four-hour course for which no college credit is given, intended primarily for freshmen who enter with a condition in mathematics or who can not make a satisfactory record in course 3. Simple equations, involution, theory of exponents, radicals, quadratic equations, graphs, Hedrick's Algebra for Secondary Schools.

First Semester; T. W. Th. F., 10:00; Miss BUCHANAN, 11 M.

2. Solid Geometry. (4 Hrs.) This course includes also a short review of special topics in algebra, such as radicals, equations of the first and second degrees, etc.

First semester: M. T. Th. F., 8:00; Miss BUCHANAN, 11 M.

3. Advanced Algebra. (3 Hrs.) Radicals, imaginaries, graphic algebra, logarithms, elementary theory of equations with Horner's method.

First semester: M. W. F., 9:00; section one, Professor EIESLAND, 14 W.

Section two, Miss BUCHANAN, 11 M.

4. Plane Trigonometry. (2 Hrs.) Prerequisite, algebra through quadratics.

First semester: T. Th., 9:00; section one, Professor EIESLAND, 14 W.

Section two, Miss BUCHANAN, 11 M.

Second semester: T. Th., 9:00; Miss BUCHANAN, 11 M.

5. Plane Analytic Geometry. (3 Hrs.) Prerequisites, courses 3 and 4.

Second semester: M. W. F., 9:00; Professor EIESLAND, 14 W.

6. Plane and Spherical Trigonometry. (2 Hrs.) This course is a continuation of 4 and includes special topics in plane trigonometry such as Des Moiore's theorem, trigonometric series, solution of trigonometric equations and also application of spherical trigonometry to astronomical problems.

Second semester: T. Th., 9:00; Professor EIESLAND, 14 W.

7. Differential and Integral Calculus. (3 Hrs.) Prerequisites, courses 3, 4, 5, and 6. Two conference hours each week.

First semester: 8:00; Professor EIESLAND, 14 W.

8. Differential and Integral Calculus. (3 Hrs.) This course is a continuation of course 7. Two conference hours each week.

Second semester: 8:00; Professor EIESLAND, 14 W.

NOTE:—In courses 7 and 8, the part of each denoted as "conference," two hours weekly, is not intended to increase the amount of prepared class-work. It really amounts to two hours weekly of study in preparation for the regulah class recitations with the help and guidance of the teacher. Attendance at these conferences is required just as in the case of the regular recitations.

9. Differential Equations. (3 Hrs.) Prerequisites, courses 7 and 8.

Second semester: T. Th. F., 10:00; Professor EIESLAND, 14 W.

10. Theory of Determinants and Analytic Geometry of Space. (2 Hrs.) Prerequisite, courses 5, 7 and 8.

Second semester: M., 10:00 and W., 3:00; Professor EIESLAND, 14 W.

11. Advanced Topics in Calculus. (2 Hrs.) This course is based on Goursat, and includes a discussion of Fourier's series with applications to heat.

First semester: T. Th., 10:00; Professor EIESLAND, 14 W.

12. Projective Geometry. (3 Hrs.)

First semester: M. and F., 10:00 and W., 3:00; Professor EIESLAND, 14 W.

13. Analytic Geometry and Calculus. (5 Hrs.)

First semester: 11:00; Professor EIESLAND, 14 W.

14. Differential and Integral Calculus. (5 Hrs.)

Second semester: 11:00; Professor EIESLAND, 14 W.

Astronomy

21. Descriptive Astronomy. (3 Hrs.) Opportunity is given to those who wish to do sextant work and work with a portable transit.

Second semester, hours to be arranged; Professor EIESLAND, 14 W.

MECHANICAL ENGINEERING

Credit not to exceed thirty hours will be given in the College of Arts and Sciences for certain courses in this subject given in the College of Engineering. See page 136.

MECHANICS AND APPLIED MATHEMATICS

Credit not to exceed thirty hours will be given in the College of Arts and Sciences for certain courses in this subject given in the College of Engineering. See page 136.

MEDICAL SCIENCES

Professor SIMPSON and Assistant Professor WATSON

Physiology

1. Physiology. (5 Hrs.) Intended for college students who do not care to go into the details of medical physiology. The course covers fully all the preparation needed for teachers' courses. A study of the function of the different organs of the body, illustrated by demonstrations of human organs and those of the lower animals, with a microscopic study of the most important tissues of the body.

First semester: 11:00; Professor SIMPSON, 9. W.

2. Physiology. (5 Hrs.) Required of all students taking the first two years in medicine. Lectures, demonstrations, recitations and assigned lessons, covering the muscles, nerves, central nervous system, special senses, blood and lymph.

First semester: 8:00; Professor SIMPSON, 9 W.

3. Physiology. (5 Hrs.) Intended for medical students. Required of all medical students. Continuation of Physiology 2. Organs of circulation; physical factors; nervous control of organs; vasomotor nerves; respiration; digestion, secretion and nutrition; heat production; reproduction.

Second semester: 8:00; Professor SIMPSON, 9 W.

4. Physiology. (3 Hrs.) Required of all medical students. Laboratory course to supplement Physiology 2 and 3. Each student makes complete records of each experiment, and these with his note book are examined at the end of the course. Experiments in muscle contraction and conduction of nerves. Blood pressure, heart control, pulse and digestion.

Second semester: laboratory, M. Th. F., 10:00-12:00; Professor SIMPSON, 9 W.

Anatomy

11. Osteology. (4 Hrs.) Required of all medical students. Informal talks and quizzes on the bones, joints and ligaments of the human skeleton. A set of bones is furnished each student for study outside of the class room.

First semester: M. T. W. F., 9:00; Professor WATSON, 8 W.

12. Histology. (3 Hrs.) Required of all medical students. A microscopic study of the normal organs and tissues of the human body and of animals.

First semester: M. W. F., 2:00-4:30; Professor WATSON, 8 W.

13. Dissection. (5 Hrs.) Intended for medical students, and required of all taking the two years in medicine. Careful dissection of the cadaver with reference to the nerves, blood vessels and muscles. The cadaver is divided into three parts, each student dissecting an arm, a leg including the abdominal vicera and the head including the thoracic vicera. A fee of five dollars is charged for each part.

Second semester: laboratory, 2:00-4:30; Assistant Professor WATSON, A. L.

14. Dissection. (5 Hrs.) Required of second year medical students. Continuation of Dissection 3.

Second semester: laboratory, 2:00-4:30; Assistant Professor WATSON, A. L.

21. Pathology. (2 Hrs.) Primarily for medical students. Required of students taking the two years in medicine. The course consists in the gross and microscopic study of diseased tissues, organs, and new growths in the human body. Prerequisite, Histology 2.

First semester: laboratory, Tu. T., 2:00-4:30; Assistant Professor WATSON, 8 W.

22. Pathology. (4 Hrs.) Required of all second year medical students. Continuation of Pathology 1.

Second semester: laboratory, M. Tu. W. T., 8:00-11:00; Assistant Professor WATSON, 8 W.

31. Physical Diagnosis. (2 Hrs.) Required of all medical students. A course designed for second year students to teach the proper way to take clinical histories of patients; the different procedures in making a physical examination and the position of the organs of the chest and abdomen, with the methods of location of each.

First semester: Tu. T., 9:00; Professor SIMPSON, 9 W.

Pharmacology

41. Pharmacology. (3 Hrs.) Required of all medical students. Study of the histology of some of the plants used in medicine; of crude drugs and their preparations; of the physiological actions, toxicology, and therapeutics of drugs. These are illustrated as far as possible by animal experiments.

Second semester: M. W. F., 9:00; Professor SIMPSON, 9 W.

42. Pharmacology. (2 Hrs.) Required of all medical students. Continuation of Pharmacology 1. In this course the student is required to make fluid extracts, tinctures, infusions, pills, ointments, mixtures, and emulsions and to perform experiments showing the action of drugs upon lower animals, the action of anæsthetics and their proper administration.

Second semester: laboratory, T. Th., 9:00-12:00; Professor SIMPSONS, 9 W.

43. Pharmacology. (3 Hrs.) Required of medical students. Continuation of Pharmacology 1. The course covers the study of the standard drugs and their preparation.

First semester: M. W. F., 9:00; Professor SIMPSON, 9 W.

Medical Jurisprudence

51. Medical Jurisprudence. (1 Hr.) Required of second year medical students. The course is intended to acquaint the student as far as possible with the laws concerning the relation of Physician to his patient, medicolegal inspections, signs, modes and causes of death, wounds, personal identity, general toxicology, and disposition of human bodies.

Second semester: F., 8:00; Assistant Professor WATSON, 8 W.

MUSIC

MISS HAYES

Note:—Fifteen hours of the following courses may be offered for credit in the College of Arts and Sciences. These courses are designed not only for students of the School of Music but as a part of a general education.

1. Harmony. (5 Hrs.) First semester, 9:00.

2. Harmony. (5 Hrs.) Second semester, 9:00.

3. Counterpoint. (5 Hrs.) First semester, 11:00.

4. Analysis. (5 Hrs.) Second semester, 11:00.

5. History of Music. (5 Hrs.) First semester, 10:00.

6. History of Music. (5 Hrs.) Second semester, 10:00.

PHILOSOPHY

Professor PURINTON

1. Logic: Deduction. (2 Hrs.) A study of the processes of conception, judgment and reasoning; nature and laws of experience, induction and subsidiary processes, such as observation, experiment, classification and hypothesis; inductive methods; imperfect inductions and fallacies; elements of deduction and formal logic. Recitations, lectures, and notes by the instructor, with references to standard authorities.

First semester: M. F., 10:00; 17 W.

2. Logic: Induction. (2 Hrs.) Continuation of course 1.
Second semester: T. Th., 11:00; 17 W.

3. Psychology. (4 Hrs.) An introductory course devoted to the study of the states of consciousness and mental processes, with an outline of the structure and functions of the nervous system; the principles and methods of mental training and the application of psychology to education. Lectures, with experiments and seminar work in standard authors.

Second semester: M. T. Th. F., 10:00; 17 W.

4. Ethics. (2 Hrs.) A survey of the mental processes that control conduct; fundamentals of morality, the moral faculty, ground of obligation, moral standard, moral law, moral sanction; moral culture; practical morality; personal and social duties; a review of historical ethics. Lectures, with reference to standard text-books.

First semester: T. Th., 10:00; 17 W.

5. Ethics. (3 Hrs.) Continuation of course 4.
Second semester: M. W. F., 11:00; 17 W.

6. Christian Evidence. (4 Hrs.) An outline of the historical and moral proofs concerning God and the Christian system; a brief comparative view of other religious systems.

First semester: M. T. Th. F., 11:00; 17 W.

7. History of Ancient and Mediæval Philosophy. (3 Hrs.) A brief survey of ancient philosophies in India, China, Persia, Egypt, Greece, and Rome, with reference to representative philosophers; followed by

a more extended study of the philosophical systems and writers of mediæval Europe. Lectures, with references to best standard works.

First semester: M. W. F., 9:00; 17 W.

8. History of Modern Philosophy. (3 Hrs.) Continuation of Philosophy 7. The method of treatment in this course is similar to that of the preceding one, with special reference to various phases of Christian thought in modern times. Lectures, with reference to best authors.

Second semester: M. W. F., 9:00; 17 W.

9. Problems in Philosophy. (2 Hrs.) The purpose of this course is to examine with some care the leading schools of philosophy with special reference to the psychological, ethical and religious problems involved in each. Idealism, materialism, monism, pantheism, positivism and pragmatism are considered and cognate theories presented. Lectures, with reference to standard texts.

First semester: T. Th., 9:00; 17 W.

10. Problems in Philosophy. (2 Hrs.) Continuation of course 9.

Second semester: T. Th., 9:00; 17 W.

PHYSICAL TRAINING

Director CHEZ and MRS. CHEZ

The purpose of the physical department is the development or restoration of the physical well-being of students attending the University. The director examines each student and prescribes exercises for his individual need. Special attention is given to those who are constitutionally weak.

The work is graded as much as possible to suit the needs of the students. Careful attention is given to correction of bad postural habits and to all-around development and training of the body.

Men's Department

Director CHEZ

1. Elementary Gymnastics, Theory and Practice. (1 Hr.) The object is to give each student the principles of physical training in theory and practice that he may attain physical efficiency. Study of the various forms of exercise, the different systems, their value, nomenclature, the use of apparatus.

First semester: M. T. Th., 4:00; G.

2. Gymnastics, Theory and Practice, Anthropometry. (1 Hr.) Continuation of Physical Training 1, Physical examinations, measure-

ments; their statistical and diagnostic value. Practice in taking and recording measurements and making charts; arranging work to suit individual needs.

Second semester: M. T. Th., 4:00; G.

3. Practical Hygiene. (1 Hr.) Value of exercise; food, water, ventilation, dress. Stimulants and narcotics; their effect upon the body. Personal purity.

First semester: T. W. F., hour to be arranged; G.

4. Advanced Gymnastics, Theory and Practice, Construction and Equipment. (1 Hr.) Especially adapted for teachers; Continuation of Physical Training 1, 2, 3. Construction of gymnasium, athletic field, playground arrangement and equipment. The study of games and sports best suited for all ages.

Second semester: T. W. F., hour to be arranged; G.

5. Gymnastics, Recreation. Open to all students for general exercise, bodily development, and recreation. Classes to be held during the winter months only, hour to be arranged.

6. Track Athletics. For those who wish to train systematically for track and field athletics.

First semester: M. W. F., 11:00; G.

7. General Athletic Training. Theory of training for all branches of athletics. Modern methods. Diet, sleep, and bathing.

Second semester: M. Th., 11:00; G.

8. Leader's Class. For advanced students who are assigned as leaders of squads.

During the winter months only, W., 6:30 p. m.; G.

9. Track Athletics. Theory and training. For track candidates.

During the spring months only, hour to be arranged; G.

Women's Department

Mrs. CHEZ

10. Elementary Gymnastics, Theory and Practice. (1 Hr.) Study of the Swedish system of gymnastics; its value, the use of apparatus, nomenclature, etc.

First semester: M. Th., alternate W., 4:00; 1 W.

11. Elementary Gymnastics, Theory and Practice. (1 Hr.) Continuation of Physical Training 10. Study of the Swedish system of gymnastics; its value, the use of apparatus, nomenclature.

Second semester: M. Th., alternate W., 4:00; 1 W.

12. Advanced Gymnastics. (1 Hr.) Light gymnastics, and æsthetic gymnastics. Five lectures on pelvic anatomy will be included in this course. Prerequisite, Physical Training 10 and 11.

First semester: T. F., alternate W., 4:00; 1 W.

13. School Gymnastics and Playground Work. (1 Hr.) Especially adapted for public school teachers. Drills, games, the playground movement, folk dances, etc.

Second semester: T. F., alternate W., 4:00; 1 W.

14. Elementary Anatomy. Open to all students. The muscles of the pelvis, the spine, and the shoulder girdle are given special attention with regard to gymnastic movements.

First semester: Hours to be arranged; 33 W.

15. Personal Hygiene. Open to all students. Value of exercise, bathing, diet, clothing, ventilation, care of body.

Second semester: Hour to be arranged; 33 W.

16. Recreative Gymnastics. Open to all students. Exercises for individuals; both free and light gymnastics; games, basketball, etc.

Winter months only. Hour to be arranged; 1 W.

PHYSICS

Professor WAGGONER and Mr. MOON

The various courses offered in physics are designed to meet the needs of the students in the Colleges of Arts and Sciences, Agriculture, and Engineering. For students who expect to teach physics the laboratory offers unusual facilities for individual laboratory work and the construction of apparatus. The department is provided with lecture rooms, general physical laboratories, optical and photometer rooms and electrical testing and standardizing rooms. The University Library has on file the current numbers of most of the standard journals of physics.

1. Introductory Physics. (3 Hrs.) Primarily for freshmen. Required of students in the College of Agriculture, and recommended for all students in the College of Arts and Sciences who elect physics from the science group for the requirement of A.B. or B.Sc., and who have not offered physics for entrance. The course is based on Kimball's College Physics and consists of lecture demonstrations and quizzes. The aim is to present the fundamental principles of physics and their application to every day life. See course 2 below. Prerequisite, plane geometry.

First semester: lectures, M. W., 8:00; Professor WAGGONER, 11 S; Quiz, F., 8:00; Mr. MOON.

2. Introductory Physical Laboratory. (1 Hr.) This course accompanies, and is required of all students who take course 1. The course consists of individual, quantitative, determinations of the various physical constants, and occupies one laboratory period per week.

First semester: section 1, T., 2:00; section 2, Th., 2:00; Mr. MOON, 14 S.

3. Introductory Physics. (3 Hrs.) A continuation of course 1 which is a prerequisite. See course 4 below.

Second semester: hours as in Course 1; Professor WAGGONER and Mr. MOON, 11 S.

4. Introductory Physical Laboratory. (1 Hr.) A continuation of Course 2, which is a prerequisite.

Second semester: hours as in Course 2; Mr. MOON, 14 S.

6. General Physics. (4 Hrs.) Required of all candidates for engineering degrees, and recommended for all students in Arts and Sciences who elect physics from the science group for the requirements of A.B. and B.Sc., but who have offered physics for entrance. Lectures and recitations based on Duff's "Textbook of Physics." The course aims to give a thorough drill in the derivation of the mathematical statements of the laws of physics and their application to the solution of engineering problems. Prerequisites, analytical geometry and one full unit of entrance physics. See course 7 below.

First semester: T. W. Th. F., 9:00; Professor WAGGONER, 11 S.

7. General Physical Laboratory. (1 Hr.) This course accompanies and is required of all students who take Course 6. The work is designed primarily for engineering students and occupies one laboratory period per week. No student will be permitted to enter this course until he has presented to this department a satisfactory note book such as is specified in the entrance requirements for this University.

First semester: Section 1, M., 9:00 to 11:00.
Section 2, M., 2:00 to 4:00; Mr. MOON, 2 S.

8. General Physics. (4 Hrs.) A continuation of Course 6 which is a prerequisite.

Second semester: hours as in Course 6.

9. General Physical Laboratory. (1 Hr.) A continuation of Course 7, which is a prerequisite.

Second semester: hours as in Course 7.

10. Electrical Measurements. (4 Hrs.) This course is designed for, and required of the candidates for the degree of B.S., M.E., and B.S., E.E. It consists of the study of photometry, magnetic properties of materials, the theory, calibration, and use of various electrical instruments. Prerequisites, Physics 6, 7, 8 and 9, and integral calculus.

First semester: T. Th., 11:00; laboratory, W., 2:00 to 4:00; Professor WAGGONER and Mr. MOON, 11 S.

16. Advanced Physical Laboratory. This work is individual laboratory work and the credit depends upon the amount of work done. Precise measurements in physics. A laboratory course open to students who have completed Physics 6, 7, 8, 9, and integral calculus.

Hours to be arranged; Professor WAGGONER, 11 S.

18. Heat. (4 Hrs.) Lectures and laboratory; based on Edser's "Heat for Advanced Students." The laboratory work consists of the critical study of thermometers and pyrometers, their construction, calibration and use in high temperature measurements, electric furnace construction, quantitative determination of the various heat quantities and the melting and boiling points of various metals and fluids. Prerequisites, Physics 6, 7, 8, 9, and integral calculus. (Omitted in 1912-13.)

First semester: T. Th. F., 10:00; laboratory T., 2:00 to 4:00; Professor WAGGONER, 11 S.

19. Heat. (4 Hrs.) A continuation of Course 18 which is a prerequisite.

Second semester: hours as in Course 18.

22. Light. (4 Hrs.) Lectures and laboratory work; based on Edser's "Light for Students." The laboratory work consists of a photometric and spectrophotometric study of light sources, and the methods of artificial illumination, the study of the various optical lens systems, spectrum analysis and the use of the polariscope. Prerequisites, Physics 6, 7, 8, 9, and integral calculus. (Omitted 1912-1913.)

First semester: T. Th. F., 10:00; laboratory, T. 2:00 to 4:00; Professor WAGGONER, 11 S.

23. Light. (4 Hrs.) A continuation of Course 22 which is a prerequisite.

Second semester: hours as in Course 22; Professor WAGGONER, 11 S.

25. Advanced Electricity and Magnetism. (4 Hrs.) Lectures and laboratory work. The lectures will be based on Hadley's "Magnetism

and Electricity." Prerequisites, Physics 6, 7, 8, 9, and integral calculus.

First semester: T. Th. F., 10:00, laboratory T. 2:00 to 4:00; Professor WAGGONER, 11 S.

26. Advanced Electricity and Magnetism. (4 Hrs.) A continuation of Course 25 which is a prerequisite.

Second semester: hours as in Course 25.

PHYSIOLOGY

For announcements of courses in this subject, see Medical Science, page 105.

ROMANCE LANGUAGES AND LITERATURE

Professor STATHERS, Assistant Professor DARBY and Mr. FERNANDEZ

French

1. Elementary French. (5 Hrs.) Grammar, reading and composition. Stress is laid on the pronoun and verb. Constant practice in pronunciation and oral understanding. Fraser and Squair's French Grammar; Aldrich and Foster's French Reader.

First semester: first section, 8:00; second section, 11:00; Professor DARBY, 16 W.

Second semester: hour to be arranged. Mr. ————

2. Modern French. (5 Hrs.) A continuation of course 1. Grammar, reading, composition and oral understanding. Aldrich and Foster's French Reader, Laurie's Mémoires d'un Collégien, Lamartine's Graziella.

Second semester: first section, 8:00; Mr. ————
Second section, 11:00; Professor DARBY, 16 W.

3. Fiction of the Nineteenth Century. (3 Hrs.) Reading and study of representative works from Mérimée, George Sand, Victor Hugo, Alphonse Daudet, Guy de Maupassant, Paul Margueritte, Pierre Loti, Anatole France.

First semester: M. F., 10:00, W., 2:00; Professor DARBY, 16 W.

4. Advanced Grammar and Composition. (2 Hrs.) Detailed study of the parts of speech and review of verbs. Composition and dictation based on matter illustrative of the work. Given in connection with course 3.

First semester: Tu., Th., 10:00; Professor DARBY, 16 W.

5. **France and the French.** (3 Hrs.) Study of the country from a commercial and geographical standpoint; Parisian and provincial life; conversation in French on questions of popular interest; collateral reading and reports.

Second semester: M. F., 10:00; W., 2:00; Professor DARBY, 16 W.

6. **Drama of the Nineteenth Century.** (2 Hrs.) Reading and study of several plays chosen from the works of Alfred de Musset, Scribe, Augier, Dumas, Bornier, Sardou, Lemaître, Rostand. Given in connection with course 5.

Second semester: Tu. Th., 10:00; Professor DARBY, 16 W.

7. **The Classic School.** (3 Hrs.) This course includes the study of the origin and development of classic literature and the lives and works of the leading authors from the pléiade to Molière. Lectures, readings and reports.

First semester: M. W. F., 9:00; Professor STATHERS, 11 W.

8. **The Classic School after Molière.** (3 Hrs.) A continuation of course 7, comprising the study of the remaining authors of the seventeenth century and the principal authors of the eighteenth century. Essays, collateral reading and reports on related topics of interest of the period.

Second semester: M. W. F., 9:00; Professor STATHERS, 11 W.

9. **French Syntax and Narration.** (2 Hrs.) Careful review of the parts of speech and study and application of them by means of original sentences. Narration in French of anecdotes and short stories both original and from texts.

First semester: Tu. Th., 9:00; Professor STATHERS, 11 W.

10. **Advanced French Discourse.** (2 Hrs.) A continuation of course 9. Study and application of idiomatic constructions in order to acquire facility in expression both in writing and in speaking. Paraphrasing and discussions in French based on subjects of moderate difficulty.

Second semester: Tu. Th., 9:00; Professor STATHERS, 11 W.

Note:—At least seven of the preceding courses are prerequisite to courses 11-22, which, as far as it is convenient, are given in French.

11. **The Romantic Movement.** (3 Hrs.) Lectures on the origin, development and decline of romanticism. Study of representative works of the first half of the nineteenth century. Essays, collateral reading and reports.

First semester: M. F., 10:00; W., 2:00; Professor STATHERS, 11 W.

12. **French Literature Since 1850.** (3 Hrs.) Careful study of the different literary groups and schools of the period, critical reading of representative works of the leading authors and lectures on subjects of special interest.

Second semester: M. F., 10:00; W., 2:00; Professor STATHERS, 11 W.

13. **The Novel in France.** (2 Hrs.) Origin and development of the novel, reading and comparison of representative work from its earliest appearance to the present time. Lectures, essays and reports. This course is given alternate years with course 17. (Omitted in 1912-13.)

First semester: Tu. Th., 10:00; Professor STATHERS, 11 W.

14. **French Lyric Poetry.** (2 Hrs.) Critical reading of representative poems from François Villon to the present. Versification and poetic forms; lives and works of the leading poets and their groups and schools. This course is given alternate years with course 18. (Omitted in 1912-13.)

Second semester: Tu. Th., 10:00; Professor STATHERS, 11 W.

15. **French Genres and Style.** (3 Hrs.) Origin and development of the different literary *genres;* comparative study of the style and diction of some of the best representatives of the various *genres* of modern French literature. Prerequisites, courses 7, 8, 11, 12.

First semester: M. W. F., 8:00; Professor STATHERS, 11 W.

16. **Advanced Composition and Phonetics.** (3 Hrs.) Study of phonetics and idiomatic construction accompanied by a systematic review of French syntax. Phonetic transcription and daily themes.

Second semester: M. W. F., 8:00; Professor DARBY, 16 W.

17. **Contemporary French Drama.** (2 Hrs.) Lectures on the present tendencies of the French stage, its influence and its importance. Reading and reports on recent dramatic productions.

First semester: Tu. Th., 10:00; Professor STATHERS, 11 W.

18. **Topic from Nineteenth Century Literature.** (2 Hrs.) This course is based upon the life and works of some author of the period or upon some literary group whose works and influence are studied. The subject for 1912-13 is Alphonse Daudet, his life and works.

Second semester: Tu. Th., 10:00; Professor STATHERS, 11 W.

19. **Historical French Grammar.** (2 Hrs.) Study of the origin and development of modern French syntax from popular Latin through

old French and the various formative periods of the language. Reading of selected works best suited to illustrate this development. (Omitted in 1912-13.)

First semester: Tu. Th., 8:00; Professor STATHERS, 11 W.

20. Literature of the Sixteenth Century. (2 Hrs.) Lectures on the French Renaissance and study of the lives and works of Rabelais, Calvin, Marot, Montaigne. Essays and collateral reading. (Omitted in 1912-13.)

Second semester: Tu. Th., 8:00; Professor STATHERS, 11 W.

21. Old French. (2 Hrs.) Study of old French from the standpoint of derivation, inflection and syntax. Reading of selected and illustrative works. (Omitted in 1912-13.)

22. Literature of the Middle Ages. (2 Hrs.) General survey of the period and study of selections from leading literary productions from the eleventh to the close of the fifteenth century. (Omitted in 1912-13.)

Italian

31. Elementary Italian. (3 Hrs.) Pronunciation, grammar, easy reading, composition and oral understanding. Smith's Italian Principia and Bowen's Italian Reader.

First semester: M. W. F., 9:00; Professor DARBY, 16 W.

32. Modern Italian. (3 Hrs.) A continuation of course 31. Reading in class of Manzoni's I Promessi Sposi and selections from other modern authors. Composition, dictation and conversation.

Second semester: M. W. F., 9:00; Professor DARBY, 16 W.

33. Modern Italian Literature. (2 Hrs.) Study of the leading authors and reading of representative works from Italian literature of the eighteenth and nineteenth centuries. Collateral reading and reports. (Omitted in 1912-13.)

First semester: Tu. Th., 9:00; Professor DARBY, 16 W.

34. Introduction to Early Italian Literature. (2 Hrs.) Lectures on Dante and his precursors, reading and study of selections from Dante, Bocaccio, Petrarch and Tasso. Collateral reading and reports. (Omitted in 1912-13.)

Second semester: Tu. Th., 9:00; Professor DARBY, 16 W.

Spanish

41. Elementary Spanish. (3 Hrs.) Grammar and reading with practice in pronunciation, composition and oral understanding. Hills and Ford's Spanish Grammar and Fontaine's Flores de España.

First semester, M. W. F., 11:00; Professor STATHERS, 11 W.

42. Modern Spanish. (3 Hrs.) Reading and study of three or four works selected from the following authors: Perez Galdós, Valdés, Valera, Alarcón, Blasco Ibáñez, Selgas, Moratín, Nuñez de Arce, Echegaray, Ayala, Avellaneda. Composition and conversation.

Second semester: M. W. F., 11:00; Professor STATHERS and Mr. FERNANDEZ, 11 W.

43. Commercial Spanish. (2 Hrs.) Business correspondence and commercial terms; conversation in Spanish on topics relating to travel, daily life and questions of present interest. Themes, collateral reading and reports. (Omitted in 1912-13.)

First semester: Tu. Th., 11:00; Professor STATHERS and Mr. FERNANDEZ, 11 W.

44. Classic Drama and the Age of Cervantes. (2 Hrs.) Critical reading of selected works of Lope de Vega and Calderón and of extracts from Cervantes' Don Quijote de la Mancha. Papers on the lives, works, and times of these authors. (Omitted in 1912-13.)

Second semester: Tu. Th., 11:00; Professor STATHERS and Mr. FERNANDEZ, 11 W.

ZOOLOGY

Professor REESE

The courses in this department are intended to serve as a means of general culture and to prepare students to become investigators and teachers of zoology. A wide field is offered for investigation in the organization, functions, habits, and evolution of animal life. Upon the results of such investigations rest to a large extent the sciences of medicine, psychology, and sociology. Courses 1, 2, 9, and 10 are of especial interest to teachers. Courses 1, 2, and 6 are required of students in the six-year medical course.

1. Animal Biology. (4 Hrs.) A study chiefly of invertebrate animals, with an introduction to the vertebrates. The study of structure is conducted with constant reference to function and adaptation, and the student performs simple experiments on the behavior of protozoa, hydra, earthworm, etc. A few lectures deal with the structure and physiology of the cell, reproduction, etc.

First semester: T. Th., 8:00; 49 W.; laboratory, Th. F., 2:00-4:30; 50 W.

2. Vertebrate Zoology. (4 Hrs.) Dissection of the dogfish, frog, and cat. Lectures and recitations upon the biology, comparative anatomy, and evolution of vertebrates. Prerequisite: zoology 1 or an equivalent.

Second semester: same hours as Zoology 1; 50 W.

6. Vertebrate Embryology and Neurology. (4 Hrs.) Cleavage, gastrulation and the formation of the germ layers are studied in the frog and chick; the development of organs in the chick and pig. These materials are supplemented by sections, dissections, and cleared preparations of human embryos. The last four weeks are devoted to the dissection of the sheep's brain, and to the study of dissections of human brains. Reese's Vertebrate Embryology, and Burkholder's Anatomy of the Brain. Prerequisite: course 2 or an equivalent.

First semester: M. T. Th. F., 10:00-12:00; W. 11:00; 50 W.

9. Methods in Zoology. (2 or 3 Hrs.) A practical course in the methods of collecting, preserving, injecting, making microscopic preparations, etc. Prerequisite: courses 1 and 2 or an equivalent.

First or second semester; hours to be arranged, 51 W.

10. Principles of Biology. (3 Hrs.) This course deals with the conditions of animal life and the means of adaptation. It includes the study of habits, reactions, food relations, coloration, regeneration, etc.; the course of organic evolution; theories regarding the origin of species, heredity, etc. Lectures, recitations and assigned readings. Prerequisite: course 1 or an equivalent.

Second semester: M. W. F., 11:00; 49 W.

15. Comparative Anatomy and Embryology. (credit in proportion to work done.) An advanced course; to be taken ordinarily only after all of the preceding courses have been completed.

First or second semesters: hours to be arranged; 51 W.

19. Current Literature. (1 Hr.) Designed for advanced or graduate students. The purpose of this course is to familiarize the student with the character of the work that is being published in the best-known American and foreign zoological journals.

First or second semester: hour to be arranged; 52 W.

20. Research Work. (credit in proportion to work done.) Properly qualified students may undertake research work upon the anatomy or physiology of animals.

First or second semesters: hours to be arranged; 51 W.

Note:—For courses in entomology see page 175.

THE COLLEGE OF ENGINEERING AND MECHANIC ARTS

FACULTY

THOMAS EDWARD HODGES, LL.D., *President*

CLEMENT ROSS JONES, B.Sc.C.E., M.ME., *Dean and Professor of Steam and Experimental Engineering*

FREDERICK LINCOLN EMORY, M.M.E., M.E., *Professor of Mechanics and Applied Mathematics*

RUSSELL LOVE MORRIS, C.E., *Professor of Railway and Highway Engineering*

EDWIN FAYETTE CHURCH, JR., *Professor of Machine Design and Construction*

WILLIAM ELMORE DICKINSON, A.B., M.M.E., *Professor of Electrical Engineering*

EDWARD NATHAN ZERN, B.Sc., E.M., *Professor of Mining Engineering*

ROLAND PARKER DAVIS, S.B., M.C.E., *Associate Professor of Structural and Hydraulic Engineering*

JOHN B. GRUMBEIN, B.S.M.E., *Assistant Professor of Mechanical Engineering*

THOMAS HOWARD CATHER, *Instructor in Machine Shop and General Foreman of Shops*

ROBERT HENRY CHANDLER, *Instructor in Woodworking and Foundry Practice*

RUFUS A. WEST, *Assistant in Metal Working and Stationary Engineer*

GEORGE WALTER GROW, *Assistant in Experimental Engineering and Drawing*

ALEXANDER REID WHITEHILL, PH.D., *Professor of Chemistry*

SAMUEL B. BROWN, A.M., *Professor of Geology and Mineralogy*

FREDERICK LAWRENCE KORTRIGHT, D.SC., *Professor of Chemistry*

JOHN ARNDT EIESLAND, PH.D., *Professor of Mathematics*

CHAUNCEY WILLIAM WAGGONER, PH.D., B.S.C.E., *Professor of Physics*

WILLIAM JACKSON LEONARD, *Associate Professor of Fine Arts*

DAVID DALE JOHNSON, A.M., *Assistant Professor of English*

FACULTY COMMITTEES

Engineering Curricula. Dean JONES, Professors MORRIS, CHURCH and DICKINSON, and Associate Professor DAVIS.

Engineering Society. Professors EMORY, MORRIS, and DICKINSON, Assistant Professor GRUMBEIN, and Mr. GROW.

Library. Professor CHURCH, and Associate Professor DAVIS.

Trade Literature. Assistant Professor GRUMBEIN.

ORGANIZATION

The College of Engineering contains the following departments:

Machine design and construction.
Electrical engineering.
Mechanics and applied mathematics.
Mining engineering.
Railway and highway engineering and surveying.
Steam, gas, and experimental engineering.
Structural and hydraulic engineering.

BUILDINGS AND EQUIPMENT

All instruction in engineering subjects is centralized in the Mechanical Hall. This building is located on the southeast corner of the campus and fronts the athletic field. It really consists of two buildings connected by covered passageways. The main building is 168½ feet long and three stories high, with a well-lighted basement running under its entire length. In this building are the lecture, recitation, draw-

ing, and instruction rooms of the various engineering departments, the machine and woodworking shops, and the mechanical and electrical laboratories. The rear building, known as the power plant, is one story in height and contains the boiler and engine rooms, the forge shop, the foundry, and the sheet metal and pipe fitting shop. The drawing rooms, shops, power plant, and laboratories are equipped with modern apparatus and machinery for practical and experimental work.

In the drawing rooms are collections of models of bridges, furnaces, structures, mechanisms, engines, pumps, valves and valve gears; descriptive geometry models; sets of charts, state and government maps, surveys, photographs, engineering specifications, drawings, tracings, and blue prints. In connection with the drawing rooms there is a blue printing and photographic room and dark closet, equipped with electric and sun printing apparatus and photographic outfit.

The shops consist of a woodworking shop, forge shop, foundry, machine shop, and sheet metal and pipe fitting shop. Each work shop occupies a separate room and is independently equipped with suitable benches, measuring instruments, tools, shop appliances, and machines, such as are ordinarily installed in the larger engineering colleges and commercial shops. These afford ample facilities for performing all the fundamental operations in machine construction and for building machines of moderate size.

The power plant equipment consists of different types of steam and gas engines, direct-connected or belted to electric generators; a 75 K. W. Westinghouse condensing steam turbine direct-connected to a direct current generator; steam boilers, equipped for burning both gas and coal; an independently fired superheater; pumps, condensers, air compressors, steam traps and other auxiliary apparatus, providing the means for furnishing any desired kind of power. The power for the shops and laboratories is ordinarily obtained from a 50 H. P. Westinghouse two-cylinder gas engine, direct-connected to a 37½ K. W. Westinghouse direct current generator, from which it is distributed to motors or other apparatus, but this can be increased by operating independently, or in parallel, one or more additional machines driven by the steam turbine, the steam engines, or by a rotary converter connected with the city mains. Single and two-phase alternating current may be obtained from city mains or from a 20 K. W. motor generator set, and one, two, and three-phase current may be developed by a double-current dynamo driven as an inverse converter or as an alternating current dynamo.

The engineering laboratories are fitted with standard gauges, measuring, calculating, and recording instruments; apparatus and appliances for qualitative and quantitative experimental work in civil, mechanical, steam, hydraulic, electrical and mining engineering.

The testing laboratory is equipped with apparatus and machines for testing cement, iron, steel, brick, stone, and other materials of engineering. The principal machines and apparatus are an Olson testing machine of 400,000 pounds capacity, taking tension and compression specimens up to six feet, and beams up to sixteen feet in length; a 50,000-pound Riehle testing machine; a 20,000-pound Riehle automatic and autographic testing machine; a 10,000-pound Olsen transverse testing machine; a 60,000 inch-pound Riehle-Miller torsion machine; two Fairbanks and one Olsen cement testers; a standard abrasion cylinder; a stone saw; besides smaller apparatus for testing cement, lubricating oils, and extension and deflection of materials.

The mechanical and steam laboratories contain small steam and gas engines, a compound air compressor with electric and mechanical control, Westinghouse air brake apparatus, rotary air motors, a hot air engine, a small vertical steam boiler, a direct steam driven ventilating fan, dynamometers, friction brakes, condensers, injectors and ejectors, steam and gas engine indicators, revolution counters, planimeters, anemometers and apparatus for testing pressure gauges, indicator springs, thermometers, flow of steam and air through nozzles, etc. These are supplemented by the power plant equipment previously described, which affords facilities for steam and gas engine trials and boiler tests with larger units, and also provides facilities for various lines of experimental investigation.

The electrical laboratory is provided with a number of small compound, shunt and series-wound direct current generators and motors, ranging from 2½ to 20 kilowatt, two and three-phase alternating current generators and motors of frequencies from 20 to 133 cycles, and capacities ranging from 2 to 20-kilowatt; rotary converter and motor generator sets; an 8-horse-power variable speed Stow motor, driving a 5-kilowatt, 2-phase, 220-volt, 10 pole, alternator, which may give any frequency from 40 to 133 cycles; a 3-horse-power inter-pole motor; a 3-horse-power Thompson-Ryan variable speed motor, which, driving a small alternator, affords frequencies from 15 to 60 cycles; a 5-horse-power Lamme series single-phase motor; a 3-horse-power self-starting, Century, single-phase induction motor; a 5-horse-power General Electric, single-phase motor; a 10-horse-power Stanley 2-phase induction motor equipped with compensator, condenser, and tranformers; a 10-horse-power Sprague electric dynamometer; various types of Cutler-Hammer and other speed regulating and controlling apparatus; static, auto and constant-current transformers; a welding transformer; a high potential transformer for testing insulation, etc.; a Thodarson set of experimental apparatus for demonstrating any of the principles of electricity; a Queen & Co.'s testing set, with standards of capacity, induction and resistance, and

with a potentiometer and standard cell, for standardizing electrical instruments; a General Electric oscillograph with accessories; standard and commercial indicating and recording measuring instruments; synchronism and power-factor indicator; dynamometers; permeameters; galvanometers; tachometers and speed counters; rheostats of various types and capacities; and six distributing panels of switchboard. The photometric and the storage battery equipments of the department of physics are also available in connection with the above. This is also supplemented by the larger generating and controlling units in the power plant.

The hydraulic laboratory equipment consists of a compound duplex steam pump supplying water to a closed steel pressure tank, from which run headers arranged for the insertion of orifices, nozzles, and pipes supplying the various hydraulic motors; concrete storage tanks; measuring tanks and weighing scales; Cascade water wheels; Venturi meter, water meters, steel weir-box, weir-gauges, and other minor measuring and controlling apparatus.

The passenger locomotive donated by the Baltimore & Ohio Railroad Company furnishes a nucleus for instruction in railway engineering.

The Ingersoll-Rand and Sullivan Machinery Companies have each recently furnished the department of mining engineering with a compressed air mining machine and also with a rock drill and tripod mounting complete.

Transits, levels, compasses, etc., are provided for the use of students in land and mine surveying and in highway and railway construction.

The latest trade literature, catalogues, and reports of commercial developments in engineering are kept in classified files for students' reference. The University library has a thoroughly classified and indexed collection of the standard and latest books in engineering and the allied sciences, complete bound sets of the transactions of several scientific and engineering societies, and current issues and bound volumes of the principal scientific and technical periodicals.

FACILITIES FOR PRACTICAL WORK

The University is located in a region which affords the student unusual opportunities for practical observation and education in engineering. Morgantown is situated practically at the edge of three extensive coal regions; the Fairmont, the Deckers' Creek and the Connellsville fields. The nearest large workings in the Pittsburg coal seam are within a mile of the University, and the nearest in the Upper Freeport vein

are only four miles away. Connellsville is only forty-five miles distant from Morgantown, and Pittsburg, the center of the world's greatest iron and steel industries, is 103 miles distant.

West Virginia's gas and oil districts approach within four miles of Morgantown and supply fuel for numerous factories. There are two brick works in the city, making building and paving brick from the local clay and shale; and twelve glass factories in the vicinity, producing pressed, plate, and cut glass, window glass, and bottle glass from the adjoining sandstone beds. At Mannheim is a large portland cement mill and another is being erected in the Deckers' Creek valley.

REQUIREMENTS FOR ADMISSION TO THE COLLEGE OF ENGINEERING

ADMISSION TO REGULAR CURRICULA

The subjects and number of units in each required for admission to the regular four-year engineering curricula are as follows:

English	3
Foreign Language	3
Algebra	1½
Plane and solid geometry	1½
Physics with laboratory	1
History	1
Free hand drawing	1
Elective	2
Total	14

Students are recommended to meet the foreign language requirement by offering two units in German and one unit in French. The electives may be selected from the list on page 54 of the catalogue.

For the year 1912-13, one unit in chemistry may be substituted for one unit in foreign language.

ADMISSION WITH ADVANCED STANDING

Students from other institutions will be given credit for work already done in accordance with the general rules for advanced standing on page 33 of the catalogue, but at least one year resident work will be required for any of the baccalaureate degrees in engineering.

ADMISSION AS SPECIAL STUDENTS

Students desiring to take special work in the College of Engineering and Mechanic Arts are required to conform to the general regulations of the University regarding special students. (See page 32.) Such students must give satisfactory evidence that they are prepared to take the desired studies advantageously; but if they subsequently desire to become candidates for a degree, or to take a regular curriculum in engineering, they must pass the required entrance examination for that year.

CREDIT FOR WORK DONE IN ABSENCE

Students of the College of Engineering are permitted to apply for advanced standing for not more than six hours credit for practical work done in the field, shops, or drafting room, in the following subjects during vacation or other periods of absence from the University: Woodworking (Courses 1, 2, and 3), Pattern making (4), Foundry practice (5), Forging (7), Metal working (9), Pipe fitting (10), Bench and vise work, (12), Machine tool work (14), Machine construction (15) Electrical construction (18), Mechanical drawing (20, 22, 24, and 25).

THE ENGINEERING CURRICULA

The College of Engineering offers to students three different kinds of curricula:

1. Regular curricula for undergraduate students.
2. Curricula for graduate students.
3. Special curricula for special students and students of other colleges.

REGULAR CURRICULA FOR UNDERGRADUATE STUDENTS

1. A four-year curriculum leading to the degree of Bachelor of Science in Civil Engineering.

2. A four-year curriculum leading to the degree of Bachelor of Science in Mechanical Engineering.

3. A four-year curriculum in electrical engineering leading to the degree of Bachelor of Science in Electrical Engineering.

4. A four-year curriculum leading to the degree of Bachelor of Science in Engineering of Mines.

REQUIREMENTS FOR GRADUATION

To receive any of the baccalaureate degrees conferred in the College of Engineering the student must have satisfied all the entrance requirements as stated above on page 125 and must have received credit for one hundred and forty eight semester hours, including four weeks summer practice equivalent to four semester hours. The particular curriculum and distribution of work prescribed for each degree are stated below. Students who have, prior to September 1, 1912, completed the first or first and second years of any curriculum, will be required to complete the course as scheduled. Those who have completed the work outlined for the first three years will be required to complete the equivalent of the work outlined for the fourth year in the catalogue of 1910-11.

THESES

Every candidate for a baccalaureate or graduate degree in engineering will be required to prepare a thesis on some subject relating to a special branch of engineering or other department of applied science. The thesis must be either a design or a review of some machine, structure, or process, belonging to some department of scientific investigation. It must be fully elaborated and accompanied by the necessary working drawing or models required for the proper elucidation of the subject of the thesis. With its accompanying drawings it will be presented for approval, first to the instructor under whose guidance it has been prepared, then to the head of the department in which the degree is to be conferred. A typewritten copy of the thesis, prepared according to official specifications for theses, and signed by the instructor in charge and the head of the department, must be placed in the University library before graduation.

ENGINEERING SOCIETY

The Engineering Society is conducted by the students of the College of Engineering under the direction of a faculty committee. The society meets once in two weeks for the investigation and discussion of scientific subjects. All engineering students are urged to join the society immediately upon entrance to the college and to perform such work as its rules require. Students taking any of the four-year curricula leading to the baccalaureate degrees in engineering are required to engage activily in the work of the society during the third and fourth years. A credit of one hour will be given for the work of each of the last two years.

UNDERGRADUATE CURRICULUM IN CIVIL ENGINEERING

Leading to the degree of Bachelor of Science in Civil Engineering

First Year—First Semester			
Rhetoric and Composition (Eng. 1)	8:00, Tu.W.F. or M.W.Th.	3	
Advanced algebra (Math. 3)	9:00, M.W.F.	3	
Plane trigonometry (Math. 4)	9:00, Tu.Th.	2	
Inorganic chemistry (Chem. 1)	11:00, M.W.F., 2:00, M.	4	
Military science 1	12:00, M.Tu.W.Th.	1	
Mechanical drawing (Eng'g 20)	2:00, Th. and 8:00 S.	2	
Woodworking (Eng'g 1)	2:00, Tu.W.F. (9 weeks)	1½	
Elements of metal working (Eng'g 9)	2:00, Tu.W.F. (9 weeks)	1½	18

First Year—Second Semester			
Rhetoric and composition (Eng. 2)	8:00, Tu.W.F. or M.W.Th.	3	
Analytical geometry (Math. 5)	9:00, M.W.F.	3	
Spherical trigonometry (Math. 6)	9:00, Tu.Th.	2	
Land surveying (Eng'g 100)	10:00, M.Tu.F.	3	
Inorganic chemistry (Chem. 2)	11.00, M.W.F., 2:00 M.	4	
Military science 2	12:00, M.Tu.W.Th.	1	
Mechanical drawing (Eng'g 22)	2:00, Tu. and 8:00, S.	2	18

Second Year—First Semester			
Differential calculus (Math. 7)	8:00 M.W.F. and Study period Tu.Th.	3	
General physics (Physics 6)	9:00 Tu.W.Th. and 2:00 M.	5	
Descriptive geometry (Eng'g 27)	10:00 Tu.Th.F.	3	
Advanced surveying (Eng'g 102)	11:00 Tu.Th.	2	
Military science 3	12:00 M.Tu.W.Th.	1	
Qualitative analysis (Chem. 4)	2:00 Tu.Th.	2	
Mechanical drawing (Eng'g 25)	2:00 F. and 8:00 S.	2	18

Second Year—Second Semester			
Integral calculus (Math. 8)	8:00 M.W.F. and Study Period Tu.Th.	3	
General physics (Physics 7)	9:00 Tu.W.Th.F. and 2:00 M.	5	
Statics (Eng'g 70)	10:00 Tu.Th.F.	3	
Mechanism (Eng'g 29)	11:00 Tu.F.	2	
Topographical surveying (Eng'g 103)	9:00 Tu. 11:00 W.	2	
Military science 4	12:00 M.Tu.W.Th.	1	
Mechanism drawing (Eng'g 30)	2:00 W. and 8:00 S.	2	18

Summer Practice (Four Weeks)			
Summer field practice (Eng'g 110)	Daily 8:00—12:00 1:00— 5:00	4	

Third Year—First Semester

Mechanics of materials (Eng'g 71)	8:00 Tu.W.Th.F.	4	
Railway location (Eng'g 104)	9:00 M.W.F.	3	
Elementary steam and gas engineering (Eng'g 120)	10:00 M.Tu.F.	3	
General geology (Geology 2)	11:00 M.W.F.	3	
Applied electricity (Eng'g 51)	11:00 T.Th. and 9:00 Th.	3	
Mechanical laboratory (Eng'g 130)	8:00 S	2	
Engineering society (Eng'g 162)	7:30 p.m. F.		18

Third Year—Second Semister

Kinetics (Eng'g 72)	8:00 Tu.Th.F.	3	
Hydraulics (Eng'g 73)	8:00 M.W.	2	
Railway maintenance (Eng'g 105)	9:00 M.W.F.	3	
Roofs and bridges (Eng'g 141)	10:00 M.Tu.Th. 2:00 to 5:00 Th.	4	
Economic geology (Geology 4)	11:00 M.W.F.	3	
Mechanical laboratory (Eng'g 131)	8:00 S.	2	
Engineering society (Eng'g 162)	7:30 p.m. F.	1	18

Fourth Year—First Semester

Water supply engineering (149)	8:00 M.W.F.	3	
Sanitary engineering (148)	8:00 Tu.Th.	2	
Masonry and foundations (Eng'g 146)	9:00 M.W.F.	3	
Bridge design (Eng'g 142)	9:00 Tu. Lecture 10:00 Tu. 9:00 Th., 2:00 M.W. Drawing	5	
Tunnelling (Eng'g 2)	10:00 M.F.	2	
Roads and pavements (Eng'g 106)	11:00 M.W.F.	3	
Engineering society (Eng'g 163)	7:30 p.m. F.	1	18

Fourth Year—Second Semester

*Railroad econ. (Eng'g 107) and	8:00 M.W.F.	3		
Highway engineering (108) or	8:00 Tu.Th.	2		
*Hydraulic const. (Eng'g 150)	8:00 Tu.W.Th.F.	4	5	
and Hydraulic measurements (Eng'g 151)	2:00 to 5:00 M.	1		
Concrete construction (Eng'g 147)	9:00 Tu.Th. and 2:00 W.F.		4	
Advanced structures (Eng'g 143)	9:00 M.W.Th.		3	
Contracts and specifications (Eng'g 161)	11:00 Tu.F.		2	
Thesis (Eng'g 113 or 152)	To be arranged		3	
Engineering society (Eng'g 163)	7:30 p.m. F.		1	18

*Option selected should be announced at the beginning of the fourth year.

UNDERGRADUATE CURRICULUM IN MECHANICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Mechanical Engineering

First Year—First Semester

Rhetoric and composition (Eng. 1)	8:00	M.T.W. or T.W.F.	3
Advanced algebra (Math. 3)	9:00	M.W.F.	3
Plane trigonometry (Math. 4)	9:00	Tu.Th.	2
Inorganic chemistry (Chem. 1)	11:00	M.W.F., 2:00 M.	4
Military science (1)	12:00	M.Tu.W.Th.	1
Mechanical drawing (Eng'g 20)	2:00	W.F.	2
Woodworking (Eng'g 1)	2:00	M.Th. and 8:00 S. First half	1½
Foundry (Eng'g 5)	2:00	M.Th. and 8:00 S. 2nd half	1½ 18

First Year—Second Semester

Rhetoric and composition (Eng. 2)	8:00	M.W.Th. or T.W.F.	3
Analytical geometry (Math. 5)	9:00	M.W.F.	3
Spherical trigonometry (Math. 6)	9:00	Tu.Th.	2
Inorganic chemistry (Chem. 2)	11:00	M.W.F., 2:00 M.	4
Surveying (Eng'g 100)	10:00	Tu. Practice hours W.F. or S.	1
Military science 2	12:00	M.Tu.W.Th.	1
Mechanical drawing (Eng'g 22)	2:00	M.Th.	2
Pattern making (Eng'g 4)	2:00	W.F. and 8:00 S.	3 18

Second Year—First Semester

Differential calculus (Math. 7)	8:00	M.W.F. Study periods Tu.Th.	3
General physics (Physics 6)	9:00		5
Descriptive geometry (Eng'g 27)	10:00	Tu.Th.F.	3
Military science 3	12:00	M.Tu.W.Th.	1
Qualitative analysis (Chem. 4)	2:00	Tu.Th.	2
Mechanical drawing (Eng'g 24)	2:00	W.F.	2
Forging (Eng'g 7)	2:00	M. 8:00 S. First half	1
Bench and vise work (Eng'g 12)	2:00	M., 8:00 S. 2nd half	1 18

Second Year—Second Semester

Integral calculus (Math. 8)	8:00	M.W.F. Study Periods Tu.Th.	3
General physics (Physics 7)	9:00		5
Statics (Eng'g 70)	10:00	Tu.Th.F.	3
Mechanism (Eng'g 29)	11:00	Tu.F.	2
Military science 4	12:00	M.Tu.W.Th.	1
Mechanism drawing (Eng'g 30)	2:00	Tu.Th.	2
Machine work: Sheet metal work (Eng'g 13)	2:00	M.W. or 2:00 F.	
	8:00	S. First half	1
Pipe fitting (Eng'g 10)	2:00	M.W. or 2:00 F.	
	8:00	S. Second half	1 18

Summer Practice (Four Weeks)

Machine tool work (Eng'g 14)	Daily—8:00-12:00 and 1:00- 5:00		4

Third Year—First Semester

Mech. of materials (Eng'g 71)	8:00 T.W.Th.F.	4	
Thermodynamics (Eng'g 121)	9:00 M.W.F.	3	
Electricity and magnetism (Physics 10)	11:00 Tu.Th. 2:00 W.	3	
Valve gears (Eng'g 31)	11:00 M.W.	2	
Mechanical lab. (Eng'g 130)	8:00-12:00 S.	2	
Machine drawing (Eng'g 32)	2:00 M.Tu.	2	
Machine construction (Eng'g 15)	2:00 Th.F.	2	
Engineering society (Eng'g 162)	7:30 p.m. F.		18

Third Year—Second Semester

Dynamics (Eng'g 72)	8:00 Tu.Th.F.	3	
Hydraulics (Eng'g 73)	8:00 M.W.	2	
Heat engines (Eng'g 122)	9:00 M.W.F.	3	
Machine design (Eng'g 35)	10:00 M.F. 11:00 W.	3	
Mechanical lab. (Eng'g 131)	8:00 to 12:00 S.	2	
Machine drawing (Eng'g 36)	2:00 M.F.	2	
Shop methods (Eng'g 16)	2:00 Tu.Th.	2	
Engineering society (Eng'g 162)	7:30 p.m. F.	1	18

Fourth Year—First Semester

Power plant design (Eng'g 123)	8:00 M.W.F.	3	
Elements of electrical Eng'g (53)	9:00 M.W.F.	3	
Steam engine design (Eng'g 39)	10:00 M.Tu.F.	3	
Advanced machine design (Eng'g 37)	11:00 M.F. 9:00 Tu.		
Structural eng'g. (Eng'g 144)	11:00 Tu. W.		
Design. and drawing (Eng'g 40)	2:00 M.W.Th.	3	
Design. and drawing (Eng'g 38)	2:00 M.W.Th.		
Engineering lab. (Eng'g 132)	8:00-12:00 Th.	2	
Electrical laboratory (Eng'g 62)	2:00 Th.	2	
Engineering society Eng'g 163)	7:30 p.m. F.		18

Fourth Year—Second Semester

Indust. management (Eng'g 46)	8:00 F.	1	
Elements of electrical eng'g (54)	10:00 M.F.	2	
Contracts and spec. (Eng'g 153)	11:00 W. F.	2	
Engineering laboratory (Eng'g 3)	8:00 Th.	2	
Electrical laboratory (Eng'g 63)	2:00 Tu.	1	
Design. and drawing (Eng'g 41)	2:00 M.W.F.	3	
Thesis (Eng'g 49 or 135)	To be arranged	3	
Engineering society (Eng'g 163)	7:30 p.m. F.	1	
*Optional from following list			18
Historical development of power machinery (Eng'g 128)	9:00 M.W.F.	3	
Steam turbines (Eng'g 44)	8:00 M.Tu.W.	3	
Gas engines (Eng'g 126)	8:00 M.Tu.W.	3	
Hydraulic const. (Eng'g 150)	8:00 M.Tu.W.Th.	4	
Gas engine design (Eng'g 45)	To be aranged	3	
Mach. and mill work (Eng'g 42)	9:00 M.W.F.	3	
Heat and vent. (Eng'g 127)	8:00 M.Tu.W.	3	

*Selection to be made at the beginning of the fourth year.

UNDERGRADUATE CURRICULUM IN ELECTRICAL ENGINEERING

Leading to the Degree of Bachelor of Science in Electrical Engineering

First Year—First Semester			
Rhetoric and comp. (Eng. 1)	8:00	M.W.Th. or Tu.W.F.	3
Advanced algebra (Math. 3)	9:00	M.W.F.	3
Plane trignometry (Math. 4)	9:00	Tu. Th.	2
Inorganic chemistry (Chem. 1)	11:00	M.W.F. and 2:00 M.	4
Military science 1	12:00	M.Tu.W.Th.	1
Mechanical drawing (Eng'g 20)	2:00	W.F.	2
Woodworking (Eng'g 1)	2:00	M.Th. and 8:00 S. First half	1½
Foundry (Eng'g 5)	2:00	M.Th. and 8:00 S. Second half	1½ 18
First Year—Second Semester			
Composition and rhetoric (Eng. 2)	8:00	M.W.Th. or T.W.F.	3
Analytical geometry (Math. 5)	9:00	M.W.F.	3
Spherical trignometry (Math 6)	9:00	Tu. Th.	2
Inorganic chemistry (Chem. 2)	11:00	M.W.F. and 2:00 M.	4
Surveying (Eng'g 100)	10:00	Tu. Practice Hours W.F. or S.	1
Military science 2	12:00	M.Tu.W.Th.	1
Mechanical drawing (Eng'g 22)	2:00	M.Th.	2
Pattern making (Eng'g 4)	2:00	W.F. and 8:00 S.	3 18
Second Year—First Semester			
Differential calculus (Math. 7)	8:00	M.W.F. Study Periods T.Th.	3
General physics (Physics 6)	9:00		5
Descriptive geometry (Eng'g 27)	10:00	Tu.Th.F.	3
Military science 3	12:00	M.Tu.W.Th.	1
Qualitative analysis (Chem. 4)	2:00	Tu.Th.	2
Mechanical drawing (Eng'g 24)	2:00	W.F.	2
Forging (Eng'g 7)	2:00	M. 8:00 S. (9 weeks)	1
Bench and vise work (Eng'g 12)	2:00	M. 8:00 S. (9 weeks)	1 18
Second Year—Second Semester			
Integral calculus (Math. 8)	8:00	M.W.F. Study periods T.Th.	3
General physics (Physics 7)	9:00		5
Statics (Eng'g 70)	10:00	T.Th.F.	3
Mechanism (Eng'g 29)	11:00	T.F.	2
Military science 4	12:00	M.T.W.Th.*	1
Mechanism drawing (Eng'g 30)	2:00	T. Th.	2
Machine work: sheet metal work (Eng'g 13)	2:00	M.W. or 2:00 F. 8:00 S. (9 weeks)	1
Pipe fitting (Eng'g 10)	2:00	M.W. or 2:00 F. 8:00 S. (9 weeks)	1 18
Summer Practice—(Four Weeks)			
Machine tool work (Eng'g 14)	8:00 to 12:00 1:00 to 5:00		4

Third Year—First Semester

Mechanics of materials (Eng'g 71)	8:00 Tu.W.Th.Fr.	4	
Thermodynamics (Eng'g 121)	9:00 M.W.F.	3	
Valve gears (Eng'g 31)	11:00 M.W.	2	
Electricity and magnetism (Physics 10)	11:00 Tu.Th. 2:00 W.	3	
Mechanical laboratory (Eng'g 130)	8:00-12:00 S.	2	
Machine drawing (Eng'g 33)	2:00 M.Tu.	2	
Machine construction (Eng'g 15)	2:00 Th.F.	2	
Engineering society (Eng'g 162)	7:30 p.m. F.		18

Third Year—Second Semester

Dynamics (Eng'g 72)	8:00 Tu.Th.F.	3	
Heat engines (Eng'g 122)	9:00 M.W.F.	3	
Machine design (Eng'g 35)	10:00 M.F. 11:00 W.	3	
Direct current machinery (Eng'g 52)	11:00 Tu.Th. 9:00 Th.	4	
Mechanical laboratory (Eng'g 131)	8:00 S.	2	
Machine drawing (Eng'g 36)	2:00 M.F.	2	
Engineering society (Eng'g 162)	7:30 p.m. F.	1	18

Fourth Year—First Semester

Power plant design (Eng'g 123)	8:00 M.W.F.	3	
Theory of alternating currents (Eng'g 55)	10:00 M.F. 9:00 W.	3	
Electric traction and transmission (Eng'g 57)	11:00 M.W.F.	3	
Electrical laboratory (Eng'g 60)	8:00 Tu.	2	
Engineering laboratory (Eng'g 132)	8:00 Th.	2	
Designing and drawing (Eng'g 59)	2:00 W. W. Th.	3	
Thesis (Eng'g 69)	To be arranged	2	
Engineering society (Eng'g 163)	7:30 p.m. F.		18

Fourth Year—Second Semester

Hydraulics (Eng'g 73)	8:00 M.W.	2	
Industrial management (Eng'g 46)	8:00 F.	1	
Alternating current machinery (Eng'g 56)	9:00 M.W.F.	3	
Electric lighting and signaling (Eng'g 58)	11:00 M.W.F.	3	
Electrical laboratory (Eng'g 61)	8:00 Tu.	2	
Engineering laboratory (Eng'g 133)	8:00 Th.	2	
Designing and drawing (Eng'g 41)	2:00 M.W.F.	3	
Thesis (Eng's 69)	To be arranged	1	
Engineering society (Eng'g 163)	7:30 p.m. F.	1	18

UNDERGRADUATE CURRICULUM IN MINING ENGINEERING

Leading to the Degree of Bachelor of Science in Engineering of Mines.

First Year—First Semester

Rhetoric and comp. (Eng. 1)	8:00 Tu.W.F. or M.W.Th.	3	
Advanced algebra (Math. 3)	9:00 M.W.F.	3	
Plane trigonometry (Math. 4)	9:00 Tu.Th.	2	
Inorganic chemistry (Chem. 1)	11:00 M.W.F., 2:00, M	4	
Military science 1	12:00 M.Tu.W.Th.	1	
Mechanical drawing (Eng'g 20)	2:00 Th. and 8:00 S.	2	
Woodworking (Eng'g 1)	2:00 Tu.W.F. (9 weeks)	1½	
Elements of metal working (Eng'g 9)	2:00 Tu.W.F. (9 weeks)	1½	18

First Year—Second Semester

Rhetoric and comp. (Eng. 2)	8:00 Tu.W.F. or M.W.Th.	3	
Analytic geometry (Math. 5)	9:00 M.W.F.	3	
Spherical trigonometry (Math.6)	9:00 Tu.Th.	2	
Land surveying (Eng'g 100)	10:00 M.T.F.	3	
Inorganic chemistry (Chem. 2)	11:00 M.W.F., 2:00 M.	4	
Military science 2	12:00 M.Tu.W.Th	1	
Mechanical drawing (Eng'g 22)	2:00 T. and 8:00 S.	2	18

Second Year—First Semester

Differential calculus (Math. 7)	8:00 M.W.F. and study period Tu.Th.	3	
General physics (Physics 6)	9:00 Tu.W.Th., 2:00 M.	5	
Descriptive geometry (Eng'g 27)	10:00 Tu.Th. F.	3	
Advanced surveying (Eng'g 102)	11:00 Tu.Th.	2	
Military science 3	12:00 M.Tu.W.Th.	1	
Qualitative analysis (Chem. 4)	2:00 Tu.Th.	2	
Mechanical drawing (Eng'g 25)	2:00 F. and 8:00 S.	2	18

Second Year—Second Semester

Integral calculus (Math. 8)	8:00 M.W.F., and study period Tu.Th.	3	
General physics (Physics 7)	9:00 Tu.W.Th.F. 2:00 M.	5	
Statics (Eng'g 70)	10:00 Tu.Th.F.	3	
Mine surveying (Eng'g. 80)	11:00 M.W.F. and 8:00 S.	4	
Military science 4	12:00 M.Tu.W.Th.	1	
Quantitative analysis (Chem.)	Hours to be arranged	2	

Summer Practice

Summer field practice (Eng'g 110)	Four weeks, daily 8:00-1200; 1:00-5:00	4	

Third Year—First Semester

Mechanics of materials (Eng'g 71)	8:00 Tu.W.Th.F.	4	
Thermodynamics (Eng'g 121)	9:00 M.W.F.	3	
Coal mining (Eng'g 81)	8:00 W, 10:00 Tu.Th.	3	
Elec. & mag. (Physics 10)	11:00 Tu.Th., 2:00 W.	3	
General geology (Geology 2)	11:00 M.W.F.	3	
Mechanical lab. (Eng'g 130)	8:00 S.	2	
Engineering society (Eng'g. 162)	7:30 p. m. F		18

Third Year—Second Semester

Kinetics (Eng'g 72)	8:00 Tu.Th.F.	3	
Hydraulics (Eng'g 73)	8:00 M.W.	2	
Coal mining (Eng'g 82)	9:00 M.Tu.Th.F.	4	
Economic geology (Geo. 4)	11:00 M.W.F.	3	
Mine design and dwg. (Eng'g 86)	8:00 Tu and 2:00 Tu.Th.	3	
Mechanical lab. (Eng'g 131)	8:00 S.	2	
Engineering society (Eng'g 162)	7:30 p. m. F.	1	18

Fourth Year—First Semester

Power plant design (Eng'g 123)	8:00 M.W.F.	3	
Elements of electrical eng. (Eng'g 53)	9:00 M.W.F.	3	
Mine des. & dwg. (Eng'g 87)	9:00 Tu., 2:00 Tu.F.	3	
Mine explosions and gases (Eng'g 83)	11:00 M.Th.F.	3	
Structural eng'g. (Eng'g 144)	11:00 Tu.W.	2	
Engineering lab. (Eng'g 132)	8:00 Th.	2	
Electrical laboratory (Eng'g 62)	2:00 Th.	2	
Engineering society (Eng'g 163)	7:30 p. m. F.		18

Fourth Year—Second Semester

Metallurgy (Eng'g 85)	8:00 M.W.F.	3	
Elect. engineering (Eng'g 54)	10:00 M.F	2	
Concrete const. (Eng'g 147)	9:00 Tu.Th., 2:00 W.F.	4	
Mine management (Eng'g 84)	10:00 Tu.Th.	2	
Mineralogy (Geology)	Hours to be arranged	3	
Thesis (Eng'g 99)	Hours to be arranged	3	
Engineering society (Eng'g 163)	7:30 p. m. F.	1	18

CURRICULA FOR GRADUATE STUDENTS IN ENGINEERING

These lead to the professional degrees of Civil Engineer, Mechanical Engineer, Electrical Engineer, and Engineer of Mines, respectively. They consist of advanced engineering courses aggregating twenty four semester hours and a thesis, and require one year of resident study and work at the University.

A candidate for a professional degree is required to have completed the prescribed four-year curriculum of undergraduate study in that department of this college in which he proposes to take a degree, or to have completed such a curriculum or its equivalent at some other institution of recognized standing, conferring the same or an equivalent baccalaureate degree. In the latter case, the diploma and other certificates of proficiency should be presented.

There is no fixed curriculum of subjects for any of these degrees, but the curriculum of study or investigation is arranged to suit the needs of each condidate, subject to the rules governing candidates for the degree of Master of Arts as stated in the announcement of the College of Arts and Sciences. Each candidate for a degree must select his major subject in the department in which his degree is to be taken and submit a thesis showing marked attainment in some phase of this subject.

SPECIAL ENGINEERING CURRICULA

1. Elective Groups for Students in other Colleges. Candidates for degrees other than engineering degrees, and special students in any department of the University. are permitted to elect subjects in the College of Engineering, provided, in each case, they have had the subjects specified as prerequisites. Students who wish to take a general classical or scientific course of study before taking the engineering curriculum are advised to carry their mathematics as far as called for by the engineering curriculum, and to take some of their elective work in the College of Engineering. The engineering instructors will advise them what is best to elect.

Credits are given in the College of Arts and Sciences for the following engineering courses:

Subject	*Credit hours*
Mechanical drawing 20-25, 30	8
Descriptive geometry 27	3
Mechanism 29	2
Theory of alternating currents 55	2

Alternating current machinery 56	3
Electrical laboratory 60, 61	4
Statics 70	3
Mechanical materials 71	4
Dynamics 72	3
Hydraulics 73	2
Land surveying 100	3
Thermodynamics 121	3
Heating and ventilating 127	3

In addition to the above the student may elect with the consent of his class officer, when his major subject is physics or education,

Engineering 1-18 (Mechanic arts)	10
Mechanical drawing 20-25, 30	3

2. Combined B. Sc. and Engineering Curriculum. The following course of study is suggested for students whose major subject is physics who expect to take an engineering degree after receiving the degree of B.Sc.

Language group:—	
Rhetoric and composition	10
French and German	30
Philosophy group:—	
History, economics, education	20
Science group:—	
Algebra, trigonometry	7
Analytical geometry, calculus	9
Physics 6, 7, 10	13
Mechanics 70, 71, 72, 73	12
Thermodynamics 121	3
Mechanism 29	2
Military science	4
Electives from group above:—	
Mechanical drawing 20-25, 30	6
Descriptive geometry 27	3
Land surveying 100	3
Shop work and other electives to suit degree to be taken	6
Total	128

Students who wish to secure the degree in civil engineering should include Geology 2 and Geology 4 in their list of electives. Those expecting to take mining engineering should elect Geology 2, Geology 4, and Mineralogy.

By following the above curriculum students may receive both the B.Sc. and the engineering degree in from five and a half to six years.

3. Partial Curricula. Deserving young men who have not the time or are otherwise unable to take a full curriculum, will be allowed to take special or partial curricula, consisting of such studies as they are prepared to take, provided that such curricula shall have been approved by their class officers. For further information see statement of requirements for admission as special students.

4. Manual Training Courses. The first group consists of courses 1, and 7 in mechanical engineering. The second group consists of mechanical drawing, courses 20, 21, 22; and shop practice in wood and metal working, courses 1, 3, 5, 7, 9, 10, 12 and 14. These courses aim to present the simple elements of some of the constructive arts which admit of being developed into a logical series of exercises. Their merit is chiefly educational, rather than as possessing any intrinsic value in relation to the several branches of handicraft work from which they are taken. The primary object is the training of the eye to see the form of objects, and of the hand to produce such forms in the materials most commonly used in constructive work. There is sufficient instruction in handicraft work and practice to form a proper foundation for the more advanced work with machine tools in mechanical construction and these courses are therefore required of all students taking the full course in mechanical engineering.

5. Special Courses for Mechanics, etc. Students who wish to become more proficient in the use of tools or who are preparing themselves for positions as foreman in industrial establishments, may take additional work in the shop in which they wish to specialize. Instruction will be given in the maintenance and repair of machinery, and opportunity will be afforded for the construction of new machines and apparatus for the University, as well as the working up in the shops of original designs which have been approved by the head of the department. All students in mechanical engineering are recommended to take advantage of this provision and devote as much time as possible to shops and drawing-room practice.

COURSES OF INSTRUCTION

In the following announcements, the name of the course is followed by its credit value in semester hours. A credit of one semester hour is given for a lecture or recitation course meeting one hour per week for one semester and requiring two hours of preparation for each lecture or recitation.

Credit for practical work in the shops, drawing rooms, laboratories, and field, is given on the basis of the actual time required, including the preparation of reports and the writing of notes, three hours actual work counting as one recitation hour.

DRAWING, MACHINE DESIGN AND CONSTRUCTION

1. Woodworking. (1½ Hrs.) For Freshmen. Required of all candidates for engineering degrees. Includes instruction in carpentry; exercises with the fundamental edge tools in soft and hard woods and in making typical framed work; wood turning; exercises comprising the fundamental geometrical forms in soft and hard woods; fitting of forms of reversed curves; face plate work; boring, finishing, and polishing.

First half of First semester: section 1, for students in electrical and mechanical engineering, M. Th., 2:00 and S., 8:00; section 2, for students in civil and mining engineering, Tu. W. F., 2:00; Mr. CHANDLER, 21 M. H.

2. Woodworking. (2 Hrs.) For Sophomores. Required of all candidates for degrees in Agriculture. Includes instruction in carpentry; exercises with fundamental edge tools in soft and hard woods, with especial attention to the making of typical framed structures.

First semester: M. Th., 8:00; Mr. CHANDLER, 21 M. H.

3. Woodworking. Advanced work for special students, who are allowed to specialize along the lines of their choice. The amount of credit to be given depends upon the time spent in the shop and the progress of the student. Prerequisite: Woodworking 1.

Second semester: hours to be arranged; Mr. CHANDLER, 21 M. H.

4. Pattern Making. (2 Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. An application of the instruction of woodworking 1 to the production of patterns for castings for machine construction; types of patterns and usual allowances for draft, shrinkage and finish; exercises in making patterns of ma-

chine elements and other work to be later executed in machine shop. Prerequisite: Woodworking 1.

Second semester: section 1, W. F., 2:00; section 2, W., 2:00 and S., 8:00; section 3, F., 2:00 and S., 8:00; Mr. CHANDLER, 21 M. H.

5. Foundry. (1½ Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. Selection, preparation and use of molding, facing and parting sands; use of typical molder's tools and appliances; cupola practice; making of castings from exercise patterns and from those for the machine shop; solid and parted patterns, cored work, use of sweeps, etc.; use of brass furnace and brass casting.

Last half of first semester: M. Th., 2:00 and S., 8:00; Mr. WEST and Mr. CHANDLER, 8 M.H.

6. Foundry. Advanced work for special students, continuation of Foundry 5.

Hours to be arranged: Mr. WEST and Mr. CHANDLER; 8 M. H.

7. Forging. (1 Hr.) Required of all candidates for degrees in electrical and mechanical engineering and agriculture. Use and care of forge, fire and tools; exercises in drawing out and sizing, forming, twisting, punching, upsetting, welding and fitting iron; ornamental iron work; steel forging, tempering and annealing; springs; making of typical lathe, shaper and planer tools for machine shop use; case hardening; use of power hammer; determination of quality of iron and steel.

First semester: section 1, for students in engineering, M., 2:00 and S., 8:00; section 2, for students in agriculture, Tu. W., 2:00 section 3, for students in agriculture, Th. F., 2:00; Mr. WEST, 7 M. H.

8. Forging. Advanced work for special students, continuation of Forging 7.

Hours to be arranged: Mr. WEST, 7 M. H.

9. Elements of Metal Work. (1½ Hrs.) Required of all candidates for degrees in civil engineering and engineering of mines. Elements of forging; use and care of forge, fire and tools; exercises in drawing out and sizing, forming, twisting, punching, upsetting, welding, and fitting iron; steel forging and hardening; use of power hammer; bench work; chipping and filing; drilling, riveting, use of pneumatic chisel and riveter.

Last half of first semester: Tu. W. F., 2:00; Mr. CATHER and Mr. WEST, 11 and 7 M. H.

10. Pipe Fitting. (1 Hr.) Required of all candidates for degrees in electrical and mechanical engineering. Use of hand dies and pipe threading machines; drilling and tapping; making up joints and erection of lines of piping; riveting, caulking and tube expanding.

Last half of second semester: section 1, M. W., 2:00; section 2, F., 2:00 and S., 8:00; Mr. WEST, 7 M. H.

12. Bench and Vise Work. (1 Hr.) Required of all candidates for degrees in electrical and mechanical engineering. Chipping, filing, scraping and polishing; squaring, formation of straight edges and surface plates; laying out work; sawing, drilling, tapping. Lectures and shop work.

Last half of first semester: M., 2:00 and S., 8:00; Mr. CATHER, 11 M. H.

13. Machine Work; Sheet Metal Work. (1 Hr.) Required of all candidates for degrees in electrical and mechanical engineering. First four weeks, continuation of Bench and Vise Work 12, leading to elementary exercises on engine lathe. Last five weeks, sheet metal work; laying out, cutting and forming of sheet metal; use of coppers, soldering, tinning and brazing. First half of semester. Prerequisite: Bench and Vise Work 12.

Second semester: section 1, M. W., 2:00, section 2, F., 2:00 and S., 8:00; Mr. CATHER and Mr. WEST, 11 and 7 M. H.

14. Machine Tool Work. (4 Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. Adjustments and operation of machine tools, measuring devices, angles of cutting tools, feeds and speeds; exercise involving fundamental operations with the lathe, planer, drill press, grinder and milling machine. Lectures and shop work. Prerequisite: Forging 7, and Chipping and Filing 12.

This work is regularly given in the supplementary term, lasting about one month immediately after the close of the second collegiate year. Students are encouraged to take the equivalent of this in actual experience by procuring summer employment in machine shops. Credit will be given in each case on the basis of the amount and character of the experience obtained.

Supplementary term: 8:00 to 12:00, 1:00 to 5:00; Mr. CATHER, 11 M. H.

15. Machine Construction. (2 Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. Continuation of Machine Tool Work 14, with special attention to assembling, fitting and erecting of machines. Lectures and shop work.

First semester: Th. F., 2:00 Mr. CATHER, 11 M. H.

16. **Shop Methods.** (2 Hrs.) Required of all candidates for degrees in mechanical engineering. Continuation of Machine Construction 15. Study of machine and other shop methods for wholesale production, use of jigs and templates and of special machines and processes; work shop appliances in general; costs of machine work; arrangement, installation and upkeep of machinery; elements of practical mill-wrighting. Shop and laboratory work; lectures, inspection trips, reading, etc.

Second semester: shop work, Tu. Th., 2:00, first half; lectures, M. W., 11:00, last half; Professor CHURCH and Mr. CATHER, 26 and 11 M. H.

17. **Machine Construction.** Advanced work for special students, continuation of Machine Construction 15 and Shop Methods 16.

Hours to be arranged: Mr. CATHER, 11 M. H.

18. **Electrical Construction.** For special students and others wishing practical experience along electrical lines. Mechanical repairs to dynamos and motors, setting and adjusting of brushes; construction of switches, switchboards and rheostats, winding coils; wiring for electric light, power and telephone service.

Hours to be arranged: Professor DICKINSON and Mr. WEST, 4 M. H.

20. **Mechanical Drawing.** (2 Hrs.) For freshmen. Required of all candidates for engineering degrees. Care and use of drawing instruments, line exercises, geometric constructions, plain lettering including proficiency in at least one style, orthographic and isometric projection, intersections and developments.

First semester: section 1, for students in electrical and mechanical engineering, W. F., 2:00; section 2, for students in civil and mining engineering, Th., 2:00, and S., 8:00; Professor CHURCH and Mr. GROW, 25 M. H.

21. **Mechanical Drawing.** (2 Hrs.) Primarily for students in home economics. Use of drawing instruments, practice in reading of drawings, designing and drawing of furniture and of room and house plans.

First semester: Tu. Th., 2:00; Professor CHURCH and Mr. GROW, 25 M. H.

22. **Mechanical Drawing.** (2 Hrs.) For freshmen. Required of all candidates for engineering degrees. Continuation of mechanical drawing 20; tracing and blue printing, working drawings from blue prints, sketches and models.

Second semester: section 1, for students in electrical and mechanical engineering, M. Th., 2:00; section 2, for students in civil and

mining engineering, Tu., 2:00 and S., 8:00; Professor CHURCH and Mr. GROW, 25 M. H.

23. Mechanical Drawing. (2 Hrs.) Required of all candidates for degrees in agriculture. Use of drawing instruments, practice in reading of drawings, building plans, designing and drawing of framed structures and their details.

Second semester: W. F., 2:00; Professor CHURCH and Mr. GROW, 25 M. H.

24. Mechanical Drawing. (2 Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. Continuation of mechanical drawing 22; working drawings, assembly and arrangement drawing, empirical design.

First semester: W. F., 2:00; Professor CHURCH and Mr. GROW, 25 M. H.

25. Mechanical Drawing. (2 Hrs.) Required of all candidates for degrees in civil engineering and engineering of mines. Continuation of Mechanical Drawing 22; drawing room conventions for representation of materials, details in topography, wooden framing, structural steel shapes and framing, etc., lettering of titles, map tracing.

First semester: F., 2:00 and S., 8:00; Professor CHURCH and Mr. GROW 25 M. H.

27. Descriptive Geometry. (3 Hrs.) Required of all candidates for engineering degrees. Orthographic projections in the four quadrants; problems of the point; line and plane; tangencies; development of single curved surfaces. Prerequisite: Mechanical Drawing 20.

First semester; Tu. Th. F., 10:00; Professor MORRIS, 24 M. H.

29. Mechanism and Machinery. (2 Hrs.) Required of all candidates for degrees in civil, electrical, and mechanical engineering. To accompany Mechanism Drawing 30. Analysis and classification of mechanisms; diagrams of relative velocities of machine parts; principles of transmission and change of motions by linkages, rolling contract, toothed gearing, couplings, belts, cams, parallel and straight line motions; analysis and classification of machines with special attention to wokshop appliances, machine tools and machinery of transmission. Lectures and recitations. Prerequisite: Mechanical Drawing 22.

Second semester: Tu. F., 11:00; Professor GRUMBEIN. 26 M. H.

30. Mechanism Drawing. (2 Hrs.) Required of all candidates for degrees in civil, electrical, and mechanical engineering. To accompany Mechanism and Machinery 29. Drawing and diagrams of me-

chanical movements, velocity diagrams, graphical solution of problems, design and drawing of gear teeth. Prerequisite: Mechanical Drawing 22.

Second Semester: section 1, for students in electrical and mechanical engineering, Tu. Th., 2:00; section 2, for students in civil engineering, W., 2:00 and S., 8:00; Professor CHURCH and Mr. GROW, 25 M. H.

31. **Valves and Valve Gears.** (2 Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. To accompany Machine Drawing 32 or 33. Brief study of simple steam engine; use and comparison of valve diagrams, study of valves and gears in common use; analysis and design. Lectures and recitations. Prerequisites: Mechanism and Machinery 29 and 30.

First semester: M. W., 11:00; Professor CHURCH 26 M. H.

32. **Machine Drawing.** (2 Hrs.) Required of all candidates for degrees in mechanical engineering. To accompany Valve and Valve Gears 31. Valve diagram problems; designing and drawing of valves and gears; steam engine drawing.

First semester: M. Tu., 2:00; Professor CHURCH and Mr. GROW, 25 M. H.

33. **Machine Drawing.** (2 Hrs.) Required of all candidates for degrees in electrical engineering. Use of valve diagram and solution of problems; assembly drawing, steam engines, boilers, dynamo electric machinery.

First semester: M. Tu., 2:00; Professor CHURCH and Mr. GROW, 25 M. H.

35. **Machine Design.** (3 Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. To accompany Machine Drawing 36. Elements of machine design, conventional and rational; proportioning of bearings, fastenings, rotating parts, connecting links and machine supports; mechanics of machinery; influence of material and treatment on design. Prerequisite; Mechanics 71 and Mechanism and Machinery 29.

Second semester: M. F., 10:00 and W., 11:00; Professor CHURCH, 26 M. H.

36. **Machine Drawing.** (2 Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. To accompany Machine Design 35. Designing and drawing of machine elements and finally of complete machine.

Second semester: M. F., 2:00; Professor CHURCH and Mr. GROW, 25 M. H.

37. Advanced Machine Design. (3 Hrs.) Optional for fourth year senior students in mechanical engineering. Continuation of Machine Design 35. To accompany Designing and Drawing 38. Graphical solutions of problems in machine forces; theory of elasticity; dynamics of machines, governors, reciprocating parts, flywheels, running balance, whirling of shafts, etc. Lectures and recitations. (Omitted 1911-12.)

First semester: M. F., 11:00 and Tu. 9:00; Professor Church, 26 M. H.

38. Designing and Drawing. (3 Hrs.) Optional for fourth year students in mechanical engineering. To accompany Advanced Machine Design 37. Designing practice of more advanced nature than that in Machine Design 35, and involving principles studied in the class room work of Course 37.

First semester: M. W. Th., 2:00; Professor Church, 25 M. H.

39. Steam Engine Design. (3 Hrs.) Optional for fourth year students in mechanical engineering. To accompany Designing and Drawing 40. Study of the modern steam engine from the point of view of the designer and constructor; detailed study of form of parts and of the forces and stresses involved; comparison of rational and empirical formulae. Dynamics of Machines; governors, reciprocating parts and flywheels. Lectures and recitations. Prerequisite: Machine Design 35.

First semester: M. Tu. F., 10:00; Professor Church, 26 M. H

40. Designing and Drawing. (3 Hrs.) Optional for fourth year students in mechanical engineering. To accompany Steam Engine Design 39. Use of empirical and rational formulae; complete design and drawing of a steam engine of simple type so far as time will allow.

First semester: M. W. Th., 2:00; Professor Church and Mr. Grow, 25 M. H.

41. Designing and Drawing. (3 Hrs.) Required of all candidates for degrees in electrical and mechanical engineering. Continuation in the drawing room of Power Plant Design 123; making of the working drawings showing the location of boilers, engines, auxiliaries, piping, coal and ash handling machinery, etc.

Second semester: M. W. F., 2:00; Professor Church and Mr. Grow 25 M. H.

42. Machinery and Mill Work. (3 Hrs.) Optional for fourth year students in mechanical engineering. Study of sites of buildings;

foundations, walls and roof; designing and construction of mill and manufacturing buildings and management of equipment; chimneys, lighting, heating, ventilating, cranes and other applicances for handling material; power generation, transmission and utilization in mills and factories. Prerequisites: Shop Methods 16 and Machine Design 35. To be given in alternate years with Steam Turbines 125.

Second semester: M. W. F., 9:00; Professor CHURCH, 26 M. H.

43. 44. 45. **Gas Engine Design.** (3 Hrs.) Optional for fourth year students in mechanical engineering. To accompany Gas Engineering 126. Calculations and drawings for gas engine, complete so far as time will allow. Prerequisite: Steam Engine Design 39.

Second semester: Hours to be arranged; Professor CHURCH, 26 M. H.

46. **Works Management.** (1 Hr.) Required of all students in electrical and mechanical Engineering. Organization of industrial establishments, management, systems of payment, cost keeping, distribution of overhead expenses, determination of cost of production, etc.

Second semester: F., 8:00; Professor CHURCH, 26 M. H.

49. **Thesis.** (3 Hrs.) Optional for fourth year students in mechanical engineering. The working out of some special problem in design or construction or both. See general thesis requirements.

Hours to be arranged; Professor CHURCH, 26 M. H.

ELECTRICAL ENGINEERING

51. **Applied Electricity.** (3 Hrs.) Primarily for the third year students in civil engineering. Required for the degree of B.S.C.E. Lectures and recitations accompanying laboratory practice. A brief course covering the principles and the most important industrial applications of electricity. Prerequisite: Physics 7.

First semester: Tu. Th., 11:00; Professor DICKINSON, 14 M. H.

Laboratory: Th., 9:00; Professor DICKINSON, and Assistants, 4 M. H.

52. **Direct Current Machinery.** (4 Hrs.) Primarily for third year students. Required for the degree of B.S.E.E. The mechanical applications of the theories of the electric and magnetic circuits. A study of the theory, construction, and operation of direct current generators and motors and allied apparatus. Prerequisite: Physics 10.

Second semester: Tu. Th., 11:00; Professor DICKINSON, 14 M. H.

Laboratory: Th., 8:00; Professor DICKINSON and Assistants, 4 M. H.

53. Elements of Electrical Engineering. (3 Hrs.) A course for fourth year students in mechanical and mining engineering. Required for the B.S.M.E. and B.S.E.M. degrees. A general study of the generation, transmission, and the utilization of electrical energy. Prerequisites: Physics 10 and Calculus.

First semester: M. W. F., 9:00; Professor DICKINSON, 14 M. H.

54. Elements of Electrical Engineering. (2 Hrs.) Continuation of Course 53. The industrial applications of electricity, with a consideration of the economic employment of systems of distribution and types of machines.

Second semester: M. W., 8:00; Professor DICKINSON, 14 M. H.

55. Theory of Alternating Currents. (3 Hrs.) Primarily for fourth year students. Required for the degree of B.S.E.E. A mathematical and graphical treatment of periodic currents and accompanying phenomena, with special reference to the engineering applications of the principles. Accompanied by Electrical Engineering Laboratory 60. Prerequisites: Physics 10 and Engineering 51.

First semester: M. F., 10:00, and W., 9:00; Professor DICKINSON and Assistants, 14 M. H.

56. Alternating Current Machinery. (3 Hrs.) Continuation of Engineering 55. Principles of design, construction and operation of single and polyphase machinery and auxiliary apparatus. Accompanied by Electrical Engineering Laboratory 61.

Second semester: M. W. F., 9:00; Professor DICKINSON, 14 M. H.

57. Electric Traction and Transmission. (3 Hrs.) Primarily for fourth year students. Required for the degree of B.S.E.E. A study of the equipment of electric railway installations, with special treatment of transmission systems for traction and general distribution. Prerequisite: Engineering 51.

First semester: M. W. F., 11:00; Professor DICKINSON, 14 M. H.

58. Electric Lighting and Signalling. (3 Hrs.) Primarily for fourth year students. Required for the degree of B.S.E.E. The first part of the course is devoted to a study of the principles of illumination and interior wiring. Later, the fundamental principles of electric signalling are treated, with their applications to modern telegraphic and telephonic systems. Prerequisite: Engineering 55.

Second semester: M. W. F., 11:00; Professor DICKINSON, 14 M. H.

59. Electrical Design and Drawing. (3 Hrs.) Primarily for fourth year students. Required for the degree of B.S.E.E. Designing and

drawing dynamos, motors, transformers, switchboards, etc. This course required nine hours a week in the designing room. Prerequisite: Engineering 51 and 35.

First semester: M. W. Th., 2:00; Professor CHURCH and Professor DICKINSON, 25 M. H.

60, 61. **Electrical Engineering Laboratory.** (2 Hrs.) Primarily for fourth year students. Required for the degree of B.S.E.E. Experimental study of the characteristics of alternating current machinery, investigations of transmission line constants and losses, tests of series lighting systems location of line faults, traction and power plant tests, etc. Prerequisite: Engineering 51.

First semester: Tu., 8:00; Professor DICKINSON, and Assistants, 4 M. H.

Second semester: Tu., 8:00; Professor DICKINSON, and Assistants, 4 M. H.

62. **Electrical Engineering Laboratory.** (2 Hrs.) Primarily for fourth year students in mechanical and mining engineering. Required for the degrees of B.S.M.E. and B.S.E.M. Practical measurements in electrical machinery; study of switchboards; calibration of instruments; determination of efficiencies and characteristics of dynamos, motors, transformers and other electrical apparatus. To accompany Engineering 53. Prerequisite: Physics 10.

First semester: Tu., 2:00; Professor DICKINSON and Assistants, 4 M. H.

63. **Electrical Engineering Laboratory.** (1 Hr.) Continuation of course 62. To accompany Engineering 54.

Second semester: Tu., 2:00, Professor DICKINSON and Assistants.

64. **Electrical Research.** For advanced and graduate students. Laboratory investigations in special lines of electrical studies.

Hours and credits to be arranged; Professor DICKINSON, 4 M. H.

65. **Electrical Engineering.** Seminar work for advanced and graduate students. Special topics will be selected for study and discussion.

Hours and credits to be arranged; Professor DICKINSON, 14 M. H.

69. **Thesis.** (3 Hrs.) Required of candidates for the degree of B.S.E.E. Special investigation or original research on some topic relating to electrical engineering.

First and second semesters: Hours to be arranged; Professor DICKINSON, 14 M. H.

MECHANICS AND APPLIED MATHEMATICS

70. Statics. (3 Hrs.) Required of all second year engineering students. A study of the composition and resolution of forces, polygram of forces, resultants of parallel forces by analytical and graphical methods, moments, couples, equilibrium of concurrent and nonconcurrent forces, center of gravity and moment of inertia by analytical and graphical methods, stresses in frames and pointed structures. Prerequisites: Integral calculus.

Second semester: Tu. Th. F., 10:00; First semester; first twelve weeks, daily, 11:00; Professor EMORY, 20 M. H.

71. Mechanics of Materials. (4 Hrs.) Required of all third year engineering students. Continuation of course 70. The strength of materials, resistance and elasticity of pipes, cylinders and riveted joints, cantilever and simple beams; tensions and compression, resistance, shear, torsion; strength of timbers, iron, steel, stone, concrete, elastic limits, factors, safety; design of simple structure. Prerequisite; Statics 70.

First semester: Tu. W. Th. F., 8:00; first semester, last seven weeks and second semester, first six weeks, daily, 11:00; Professor EMORY, 20 M. H.

72. Kinetics. (3 Hrs.) Required of all third year engineering students. Continuation of Statics 70. Laws of motion in resisting medium, central forces, centrifugal force, pendulum and governor, impulse, work, energy, power modulus of machines, revolving masses, work of variable forces, duty of engines, impresses forces, motors of rigid bodies, flywheels, conservation of energy. Prerequisite: Statics 70.

Second semester; Tu. Th. F., 8:00; second semester, last twelve (12) weeks, daily, 11:00; Professor EMORY, 20 M. H.

73. Hydraulics. (3 Hrs.) Required of all engineering students. Theoretical pressure and energy of water; flow of water through orifices and tubes and over weirs; flow in conduits, pipes, canals, and rivers, current meters, water motors, turbines. Prerequisite: Kinetics 72.

Second semester: M. W., 8:00; Professor EMORY, 20 M. H.

75. Least Squares and Adjustment of Observations. (1 Hr.) Elective for fourth year engineering students. Especially designed for civil and electrical engineering students. Errors of observation; principles of probability, weights of observations, principle of least

squares, probable errors of observation, errors in the mean, corrections of observations, normal equations, empirical formulae. Prerequisite, Calculus.

First semester: hours to be arranged; Professor EMORY, 20 M. H.

MINING ENGINEERING

80. Mine Surveying. (3 Hrs.) Primarily for sophomores. Required of all candidates for degrees in mining engineering. With this subject is included topographic surveying, location of outcrop, shaft plumbing, and the various systems of mine surveying and note keeping. The accuracy of the field work is tested by plotting the notes.

Second semester: M. W. F., 11:00; Professor ZERN, 15 M. H.

81. Coal Mining. (3 Hrs.) Primarily for juniors. Required of all candidates for degrees in mining engineering. A study of the occurrence and composition of coals; prospecting, breaking ground, transmission of power to underground workings, coal cutting, explosives, blasting, shaft sinking, timbering, and the various methods of working coal seams at home and abroad.

First semester: W. 8:00, Tu. Th., 9:00; Professor ZERN, 15 M. H.

82. Coal Mining. (4 Hrs.) Primarily for juniors. Required of all candidates for degrees in mining engineering. Treats of the various kinds of haulages in mines, the care of live stock, hoisting, pumping, ventilation, lighting, works at surface, preparation of coal for market, briquetting and coal washing.

Second semester: M. T. W. Th., 9:00; Professor ZERN, 15 M. H.

83. Mine Explosions and Gases. (3 Hrs.) Primarily for seniors. Required of all candidates for degrees in mining engineering. A study of mine air and mine gases; their generation; characteristics and behavior; the underlying causes of mine explosions; coal dust theory; measures for the prevention of explosions; rescue work after explosions, etc.

First semester: M. Th. F., 11:00; Professor ZERN, 15 M. H.

84. Mine Management. (2 Hrs.) Primarily for seniors. Required of all candidates for degrees in mining engineering. With this subject is included a study of mine economics, organization and care of labor, mine accounting and cost keeping, valuation of properties, welfare movements, etc.

Second semester: Tu. Th,, 10:00; Professor ZERN, 15 M. H.

85. Metallurgy. (3 Hrs.) Primarily for seniors. Required of all candidates for degrees in mining engineering. A course designed to give the student a working knowledge of the basic principles involved in the metallurgy of iron, steel, gold, silver, copper, zinc, lead and fuels.

Second semester: M. W. F., 8:00; Professor ZERN, 15 M. H.

86. Mine Design and Drawing. (3 Hrs.) Primarily for juniors. Required of all candidates for degrees in mining engineering. The application of the principles of construction to mine appurtenances such as powder magazines, supply houses, lamp houses, motor pits, tipples, stables, etc.

Second semester: Tu. 8:00, Tu. Th., 2:00; Professor ZERN, 15 M. H.

87. Mine Design and Drawing. (3 Hrs.) Primarily for seniors. Required of all candidates for degrees in mining engineering. Most of the work in this course is given to the projection of mine workings, the objective being successful ventilation and safety and economy in extraction, design of shaft bottoms and inside stables, and the solution of mine problems such as confront the engineer in practical work.

First semester: Tu. 9:00, Tu. F., 2:00; Professor ZERN, 15 M. H.

88. Shafting and Tunneling. (2 Hrs.) Primarily for seniors. Required of all candidates for degrees in civil engineering. Treats of the various methods used in shafting and tunneling, such as the freezing process, forepoling, pneumatic and open caisson, shields, etc. and their especial adaptability to the difficulties encountered. Rock drills, drilling and blasting practice. Practice in foreign countries, such as Germany, England, Belgium and France.

First semester: M. F., 10:00; Professor ZERN, 15 M. H.

90. Summer Field Practice. (4 Hrs.) Primarily for juniors. Required of all candidates for the degree in mining engineering. This period is devoted to applying the principles of surveying previously acquired. Through the courtesy of the Elkins Coal and Coke Company their mines, located but a few miles away, have been made available for the carrying on of much of this work

Four weeks of six days per week from the middle of June to the middle of July, between the sophomore and junior years. This course will not be given during the summer of 1912. Professor ZERN, 15 M. H.

91. The Manufacture and Properties of Coke. (2 Hrs.) Primarily for seniors. May be elected in place of Electrical Engineering 54. This course treats of the various classes of coke ovens as the beehive,

rectangular, flue or bi-product. Methods of manufacture, physical properties, effects of impurities as ash, sulphur, and phosphorus. Design of ovens, etc.

Second semester: M. F., 10:00; Professor ZERN, 15 M. H.

99. Thesis. (3 Hrs.) Primarily for seniors. Required of all candidates for degrees in mining engineering. The student is encouraged to choose such subject as will involve careful observation, collateral reading and the collection of data.

Second semester: hours to be arranged; Professor ZERN, 15 M. H.

RAILWAY AND HIGHWAY ENGINEERING AND SURVEYING

100. Land Surveying. (3 Hrs.) Required of all candidates for degrees in civil and mining engineering. Thory and practice of land surveying; magnetic variations; calculating the content; retracing old lines; division of lands; establishment of meridians; care and use of instruments; mapping and survey. Lectures, recitations, field practice.

Second semester: M. Th. F., 10:00; Professor MORRIS, 24 M. H.

101. Surveying. (1 Hr.) Primarily for first year students. Required for degrees in mechanical and electrical engineering. Theory and use of the compass, transit and level, the laying out and measurement of areas and leveling. Prerequisite: Plane trigonometry.

Second semester: Tu. 10:00; Professor MORRIS, 24 M. H.

102. Advanced Surveying. (2 Hrs.) Primarily for second year students. Required of candidates for degrees in civil and mining engineering. Continuation of Surveying 100. Adjustment of instruments, stadia surveys, leveling, etc.

First semester: Tu. Th., 11:00; Professor MORRIS, 24 M. H.

103. Topographical Surveying. (2 Hrs.) Primarily for second year students. Required of candidates for degrees in civil engineering. Theory and practice of topography, hydrographic and barometric surveying. Lectures, recitations, field practice and map drawing. Prerequisite: Land surveying 100.

Second semester: Tu., 9:00, W., 11:00; Professor MORRIS, 24 M. H.

104. Railway Location. (3 Hrs.) Primarily for third year students. Required of all candidates for degrees in civil engineering. Theory and practice of railroad surveying. Lectures, recitations, field work,

and drawing. Searles' Field Engineering. Prerequisite: Land surveying 100.

First semester: M. W. F., 9:00; Professor Morris, 24 M. H.

105. Railway Construction and Maintenance. (3 Hrs.) Primarily for third year students. Required of all candidates for degrees in civil engineering. Tunnels, trestles, track-work, earth-work, signalling, grading, masonry, drawing. Prerequisite: Railway location 104.

Second semester: M. W. F., 9:00; Professor Morris, 24 M. H.

106. Roads and Pavements. (3 Hrs.) Primarily for fourth year students in civil engineering. Required of all candidates for degrees in civil engineering. Location, construction and maintenance; study and comparison of various types of roads; road making materials; lectures, recitations and field work.

First semester: M. W. F., 11:00; Professor Morris, 24 M. H.

107. Railroad Economy. (3 Hrs.) Optional for fourth year students in civil engineering. General theory of railroad location; effects of grades, curvature, and distance on operating expenses and revenue; railroad finance and management.

Second semester: M. W. F., 8:00; Professor Morris, 24 M. H.

108. Highway Economics. (2 Hrs.) Optional for fourth year students in civil engineering. Continuation of Roads and pavements 106, with special reference to permanent improvements and maintenance of existing roads. Re-surveys, relocation, drainage, etc.

Second semester: Tu. Th., 8:00; Professor Morris, 24 M. H.

110. Summer Field Practice. (4 Hrs.) Primarily for third year students in civil engineering. Required of all candidates for degrees in civil engineering. The survey of a railway line, including reconnaissance, preliminary survey, location, amping, etc. or other field problems of like nature. Students are encouraged to take the equivalent of this in actual experience by procuring summer employment on approved surveying corps. (Omitted 1912.)

Four weeks of six days per week from the middle of June to the middle of July; Professor Morris.

113. Thesis. (3 Hrs.) Optional for fourth year students in civil engineering. See general description of engineering courses for thesis requirements.

Second semester: hours to be arranged. Professor Morris, 24 M. H.

STEAM, GAS, AND EXPERIMENTAL ENGINEERING

120. **Steam and Gas Machinery.** (3 Hrs.) Required of third year students in civil engineering. Elementary thermodynamics, steam properties, calorimeters, fuels, boilers, engines, pumps, compressors, gas engines, turbines. Arranged for the selective design of parts of a plant. Prerequisites: Physics 7.

First semester: M. Tu. F., 10:00; Professor EMORY, 20 M. H.

121. **Thermodynamics of Engineering.** (3 Hrs.) Primarily for third year men. Required of all candidates for the degrees in mechanical, electrical and mining engineering. Mechanical theory of heat, thermodynamics of gases and vapors with special application to steam and other heat engines, compressed air and refrigeration. Prerequisite: Physics 6, 7, and Integral Calculus.

First semester: M. W. F., 9:00; Dean JONES, 16 M. H.

122. **Heat Engines.** (3 Hrs.) Required of candidates for degrees in mechanical, electrical and mining engineering. Continuation of Thrmodynamics 121. Expansive working of steam and gas, principles of design, construction and operation of steam engines, air compressors, gas engines, and refrigerating machines.

Second semester: M. W. F., 9:00; Dean JONES, 16 M. H.

(First semester: M. W. F., 8:00; first twelve weeks, 1912 only, 2 semester hours. Dean JONES, 16 M. H.)

123. **Power Plant Design.** (3 Hrs.) Primarily for fourth year and graduate students. Required of candidates for degrees in mechanical, mining and electrical engineering. Embodies the details of the earlier courses of instruction in prime movers and motive-power machinery in respect to the design of steam and electric power and hydraulic plants for power transmission and manufacturing purposes; location of the plant; selection, arrangement, subdivision into units and installation; economics, organization and management of power and manufacturing plants; engineering specifications. Prerequisite: Thermodynamics 121.

First semester: M. W. F., 8:00; Dean JONES, 16 M. H.

(First and second semesters, January to March, 1913; M. W. F., 8:00. Dean JONES, 16 M. H.)

124. **Steam Boilers.** (2 Hrs.) Elective for seniors. Heating value of fuels, combustion, economical production of steam; application of theory and practice in the design of steam boilers, chimneys, and ac-

cessories; steam piping and distribution. Prerequisites: Machine design 35 and Thermodynamics 121.

Hours to be arranged; Professor GRUMBEIN, 16 M. H.

125. Steam Turbines. (3 Hrs.) Optional for fourth year students in mechanical engineering, and for graduate students. Flow of saturated and superheated steam and the theory and design of the steam turbine. Prerequisite: Heat engines 122.

Second semester: M. T. W., 8:00; Professor CHURCH, 26 M. H.

126. Gas Engines and Gas Engineering. (3 Hrs.) Primarily for fourth year and graduate students. Optional for fourth year students in mechanical engineering. The study of fuel gases, gas production and transmission, gas engines, etc. Prerequisite: Heat engines 122.

Second semester: M. Tu. W., 8:00; Dean JONES, 16 M. H.

127. Heating and Ventilating. (3 Hrs.) Primarily for fourth year students. Optional for students in mechanical engineering. Principles, comparative merits and design of various systems of ventilating, and heating by hot air, hot water, steam, electricity. A careful study of the systems in the different University buildings. Prerequisite: Thermodynamics 121, or Steam and gas machinery 120.

Second semester: M. Tu. W., 8:00; Professor GRUMBEIN, 14 M. H.

128. Development and Utilization of Power. (3 Hrs.) For fourth year and graduate students. Optional for fourth year students in mechanical engineering. Historical development of heat engines, motors, including the stationary and marine engines, pumping engines, locomotives and accessories, such as pumps, heaters, economizers, condensers, purifiers, etc., with special reference to economy in power production and its effect on the manufacturing interests. Prerequisite: Power plant design 123.

Second semester: M. W. F., 9:00; Professor EMORY, 20 M. H.

129. House Heating and Ventilating. (2 Hrs.) Primarily for students in home economics. This course includes the study of the plumbing, heating and lighting systems in private houses; approximate cost; location of simple house plans; exterior finish; interior finish of walls, woodwork and floors. Prerequisite: Drawing 21., Home economics 5.

Second semester: Tu. F., 10:00; Professor GRUMBEIN, 16 M. H.

130. Mechanical Laboratory. (2 Hrs.) Primarily for third year men. Required of all candidates for degrees in engineering. Theory, cali-

bration and use of steam engine indicators, steam gages, thermometers; calorimeter tests of coal and natural gas; testing lubricating oil; analysis of flue gases; efficiency tests of simple engines, pumps, dynamos, motors and machinery of power transmission. Prerequisite: Physics 7 and Statics 70, and accompanying Steam and gas machinery 120 or Thermodynamics 121.

First semester: S., 8:00; Dean JONES, Professor GRUMBEIN and assistants. 10 M. H.

131. **Mechanical Laboratory.** (2 Hrs.) Required for all degrees in engineering. Continuation of Mechanical laboratory 129. Tensile, torsional, compressive, and transverse tests or wrought iron, cast iron, steel and timber; transverse, compressive and absorption tests of stone, brick, cement, and concrete; also tests for fineness, specific gravity, time of setting, and constancy of volume of concrete. Prerequisites: Mechanical laboratory 130 and Mechanics of materials 71.

Second semester: S., 8:00; Dean JONES, Professor GRUMBEIN, and assistants, 10 M. H.

132. **Engineering Laboratory.** (2 Hrs.) Primarily for fourth year students. Required for degrees in mechanical, electrical and mining engineering. Tests of injectors, calorimeters, separators, multiple expansion steam engines, gas engines, steam boilers, air compressors, hydraulic motors, fans, blowers, and steam heating apparatus; practice in valve setting, flow of steam through orifices and pipes; application of Hirn's analysis to the steam engine; etc. Prerequisite: Mechanical laboratory 131.

First semester: Th., 8:00; Dean JONES, and Professor GRUMBEIN, 10 M. H.

133. **Engineering Laboratory.** (2 Hrs.) Required for degrees in mechanical and electrical engineering. Continuation of Laboratory 132. Combined tests of performances of boilers, engines, electrical and other power transmission machinery; testing of plants away from the University, when opportunity affords; special research work. Prerequisite: Engineering laboratory 132.

Second semester: Th., 8:00; Dean, JONES, and Professor GRUMBEIN, 10 M. H.

134. **Engineering Laboratory.** (— Hrs.) Primarily for graduates and advanced students. Commercial tests and research work. Prerequisite: Engineering Laboratory 133. Credit will be given on the basis of the time spent in the laboratory and the progress of the student.

Hours to be arranged. Dean JONES, and Professor GRUMBEIN.

135. Thesis. (3 Hrs.) Optional for fourth year students in mechanical engineering. Investigation or original research on some special topic relating to steam, gas or experimental engineering.

Second semester: Hours to arranged; Dean JONES, and Professor GRUMBEIN.

STRUCTURAL AND HYDRAULIC ENGINEERING

141. Roofs and Bridges. (4 Hrs.) Primarily for third year students. Required of all candidates for the degree of B.S.C.E. Consists of three recitations and one drawing period per week. Stresses in plate-girder bridges and in simple roof and bridge trusses due to dead, live, impact, wind and snow loads; methods for determining the various loads by both analytical and graphical methods. Complete design of a wooden roof truss, the design including working, detailed drawings and estimate of weight. Prerequisite: Mechanics of materials 71.

Second semester: M. Tu. Th., 10:00, and Th., 2:00 to 5:00; Professor DAVIS, 30 M. H.

142. Bridge Design. (5 Hrs.) Primarily for fourth year students. Required of all candidates for the degree of B.S.C.E. A course of four exercises in the drafting room and one lecture or recitation each week. Computations and drawings are made for the complete design of a plate-girder and a riveted or pin-connected Pratt truss bridge. The computations determine the sections of all members, as well as the details, splices, riveting, etc. The drawings are essentially complete shop drawings. Prerequisite: Roofs and Bridges 141.

First semester: Lecture Tu., 9:00; Drawing Room Tu., 10:00 to 12:00; Th. 9:00 to 12:00; W. F., 2:00 to 5:00; Professor DAVIS, 30 M. H.

143. Advanced Structures. (3 Hrs.) Primarily for fourth year and graduate students. Required of all candidates for the degree of B.S. C.E. Determination of the loading and stresses in cantilevers, continuous girders and trusses, swing bridges, and metal arches; the arches include both the two-hinged and the three-hinged types in the sprandrel-braced and arch-ribbed forms. Prerequisite: Roofs and bridges 141.

Second semester: M. W. Th., 11:00; Professor DAVIS, 30 M. H.

144. Structural Engineering. (2 Hrs.) Primarily for fourth year students. Required of all candidates for the degree of B.S.M.E. A course of two recitations per week devoted to the study of the loads

and stresses in simple beam and truss bridges and in roof trusses. The aim of this course is to give the student an insight into the design of engineering structures, while little emphasis is placed on the details of construction. Prerequisite: Mechanics of materials 71.

First semester: Tu. W., 11:00; Professor DAVIS, 30 M. H.

145. **Steel Building Design.** (3 Hrs.) For fourth year and graduate students. Elective. Mill buildings and office buildings of steel. A study of the design of trusses, beams, columns, and bracing for all loads, as well as a critical study of details, methods of erection, weights and costs. A small mill building is completely designed and shop drawings made for same. Prerequisite: Roofs and bridges 141.

Hours to be arranged. Professor DAVIS, 30 M. H.

146. **Foundations and Masonry Construction.** (3 Hrs.) Primarily for fourth year and graduate students. Required of all candidates for the degree of B.S.C.E. This course comprises a study of sheet piling, coffer dams, cribs, metal cylinder piers, bearing piles of wood, concrete and iron, pneumatic caissons, open caissons, caisson sinking, and other forms of bridge foundations. Building foundations are studied as well as methods of under-pinning the same. The general subject of masonry construction is taken up. Prerequisite: Mechanics of materials 71, and Mechanical laboratory 130.

First semester: M. W. F., 9:00; Professor DAVIS, 30 M. H.

147. **Concrete Construction.** (4 Hrs.) Primarily for fourth year and graduate students. Required of all candidates for the degree of B.S.C.E. A study is made of the constituent elements of concrete, the stone or gravel, the sand and the cement, and also of the properties of plain concrete, both from the experimental and theoretical standpoints. Special attention is given to the mechanics underlying the design of concrete beams, columns, and floor systems, and to experimental investigations in all directions and to the methods of construction of concrete structures. Prerequisite: Foundations and masonry construction 71.

Second semester: Tu. Th., 9:00, W. F., 2:00 to 5:00; Professor DAVIS, 30 M. H.

148. **Sanitary Engineering.** (2 Hrs.) Primarily for fourth year students. Required of all candidates for the degree of B.S.C.E The course is divided into two parts; first, a study of the sewage-carriage system; and secondly, a study of the modern methods of sewage disposal. Under the first is treated the design and construction of house-laterals, street-laterals and mains. The hydraulics of the flow of sew-

age in pipes is taken up, and the relative advantages of tile, iron and cement pipe discussed. Prerequisites: Hydraulics 73.

First semester: Tu. Th., 8:00; Professor DAVIS, 30 M. H.

149. Water Supply Engineering. (3 Hrs.) Primarily for fourth year students. Required of all candidates for the degree of B.S.C.E. The quantity of water required for city and town supplies, hydrology of drainage basins, stream flow and ground water supplies, determination of the necessary storage to insure a given supply, design of reservoirs, standpipes, etc., are studied. Conditions affecting the quality of water and the various means of water-purification are dealt with. Prerequisite: Hydraulics 73.

First semester; M. W. F., 8:00; Professor DAVIS, 30 M. H.

150. Hydraulic Construction and Water Power Engineering. (4 Hrs.) Primarily for fourth year and graduate students. Required of all candidates for the degree of B.S.C.E. in Option 1. Design and construction of high masonry dams, including a problem of the complete design, with working drawings, of a special masonry dam. Wooden and steel dams are considered as well as those of masonry. Irrigation engineering including special problems dealing with the storage and distribution of water. The engineering features of water power are taken up. Numerous problems, dealing with the subject matter at hand, are given throughout the course. Prerequisite: Hydraulics 73.

Second semester: Tu. W. Th. F., 8:00; Professor DAVIS, 30 M. H.

151. Hydraulic Measurement. (1 Hr.) Primarily for fourth year and graduate students. This course is designed to teach the student the methods of measuring the volume of water flowing in open channels by means of floats and current meters. This work is made particularly effective through the accessibility of the Monongahela River. The principles governing the measurement of small quantities, as by orifices, weirs, etc., are treated exhaustively, and periodicals are searched for experimental data along these lines. Prerequisite: Hydraulics 73.

First semester: M., 2:00 to 5:00 Professor DAVIS, 30 M. H.

152. Thesis. (3 Hrs.) For fourth year students. Required of all candidates for the degree of B.S.C.E. Special design, investigation or original research on some assigned topic relating to structural, hydraulic or sanitary engineering.

Second semester: hours to be arranged; Professor DAVIS.

GENERAL AND MISCELLANEOUS

160. Building Superintendence. (2 Hrs.) An elective course arranged for fourth year students in engineering and others having the preparation. Study of construction and inspection of the foundation, stone, cement, brick work, roof trusses, roof covering, veneer work, cage construction, preservation of iron work, fire proofing, plastering, inspection of gas fitting, electric and heating systems. Specifications and contracts. Prerequisite: Kinetics 72.

Either semester: time to be arranged; Professor EMORY, 20 M. H.

161. Contracts and Specifications. (2 Hrs.) Primarily for fourth year men. Required of all candidates for the degree of B.S.C.E. General laws of contracts and specification writing. The fundamental principles of contract essentials are first taken up, followed by contracts dealing with agency, torts, independent contractor, corporations, partnerships, sales and transportation. Specification writing is taken up and the student by actual practice is taught the elements of the work.

Second semester: Tu. F., 11:00; Professor DAVIS, 30 M. H.

162. Engineering Society. (1 Hr.) Primarily for third year students. Required of all candidates for degrees in engineering. Membership, attendance and active participation in the Engineering Society. See special announcements page 127.

Throughout the year; fortnightly, F. 7:00 p. m.; Professor EMORY, 15 M. H.

163. Engineering Society. (1 Hr.) For fourth year students. Required of all candidates for degrees in engineering. Continuation of Engineering 162.

Throughout the year; fortnightly, F. 7:30 p. m.; Professor EMORY, 15 M. H.

THE COLLEGE OF AGRICULTURE

THE FACULTY

THOMAS EDWARD HODGES, LL.D., *President*

E. DWIGHT SANDERSON, B.S.Agr., *Dean*

THOMAS CLARK ATKESON, Ph.D., *Professor of Animal Husbandry*

BERT HOLMES HITE, M.S., *Professor of Agricultural Chemistry*

WILLIAM HORACE ALDERMAN, B.S.Agr. *Professor of Horticulture*

CALVIN R. TITLOW, *Director of Agricultural Extension*

————————, *Professor of Farm Management*

ISAAC SCOTT COOK, JR., B.S.Agr., *Associate Professor of Agronomy*

LEONARD MARION PEAIRS, B.S.Agr. M.S., *Associate Professor of Entomology*

CHARLES AUGUSTUS LUEDER, D.V.M., *Assistant Professor of Dairying and Veterinary Science*

HORACE ATWOOD, M.S.Agr., *Assistant Professor of Poultry Husbandry*

EUGENE CURTIS AUCHTER, B.S.Agr., *Instructor in Horticulture*

LUTHER FRANCIS SUTTON, B.S., B.S.Agr., *Instructor in Horticulture*

SAMUEL BENTON NUCKOLS, M.Sc.Agr., *Instructor in Agronomy*

URIAH BARNES, LL.B., *Secretary.*

The courses required or elective in other colleges are given by the faculties of the College of Arts and Sciences, and of the College of Engineering.

AIM AND SCOPE

The training given by the College of Agriculture is designed to fit its students for farm life, or for work as teachers or investigators of agricultural subjects. A thorough training in the general sciences underlying scientific agriculture is given. The larger part of the course consists of technical work in the various branches of agriculture. The aim in these courses is to make plain the principles underlying agricultural science, and to give as much practice work as facilities will permit, so that the student will receive a training fitting him for efficient work. The curriculum is planned to give the student a general knowledge of all phases of agricuture, but at the same time to afford him opportunity to specialize in the subjects in which he is particularly interested.

In addition to the technical work in agriculture and general science, a limited amount of work is required in the College of Arts and Sciences, as the college hopes to train its students to be not only progressive farmers but good citizens.

EQUIPMENT

The class rooms and laboratories of the College of Agriculture are in Martin Hall. On the basement floor are a modern farm dairy and creamery laboratory, a milk testing laboratory, a horticultural laboratory, and a work room. On the first floor are recitation rooms and offices for the various departments. A large laboratory for work in agronomy and soils has been installed on this floor. All the laboratories are equipped with the best apparatus. The entomological laboratory is on the second floor of the Agricultural Building, and is well equipped with microscopes, charts, collections and a library. Three greenhouses are available for work in plant propagation and practical work in floriculture and vegetable growing under glass. A small barn on the campus contains most of the leading agricultural implements for instruction in farm mechanics.

The laboratories and apparatus of the scientific departments of the University, and the libraries of the Agricultural Experiment Station and University are at the command of the students in the College of Agriculture.

The farm of the Agricultural Experiment Station, together with its gardens, experiment plats, laboratories, and collections, are available for students desiring to acquaint themselves with the practical and scientific methods of conducting agricultural operations, and to investigate scientific questions relating to the progress and development of agriculture. The farm is equipped with barns, poultry houses, and other

buildings. Facilities are provided for studying the most economical methods of handling dairy cattle and their products, and poultry.

ENTRANCE REQUIREMENTS

For admission to the College of Agriculture, the candidate must have credit for fourteen units, obtained by examination or on certificate from a duly accredited secondary school.

Of the fourteen units which must be offered for admission to the course leading to the degree of Bachelor of Science in Agriculture, nine are definitely prescribed as follows:

	Units
English	3
French, German, or Latin (German is recommended)	2
History	1
Mathematics	2
Algebra 1	
Plane geometry 1	
Science	1
The unit offered may be either physics, chemistry, botany, zoology, or botany and zoology.	
Total prescribed	9

The remaining five units must be chosen as elective from the list given on page 54. A detailed statement of the work required for each unit of required and elective work is given on page 34.

On entering the college, all students will be examined as to their ability to perform the various operations necessary to carry on farm work and as to their knowledge of farming. A general outline of this examination and requirement is found on page 176. A failure to pass this examination will not exclude them from college; another opportunity will be provided at the close of the second year to pass off the requirement. If the student then fails he will be required to remain at the college during the summer vacation between his second and third year, or to work for the same period on some farm approved by the dean. He will receive his final examination on the subject at the beginning of the senior year. This work will be reported on as a preparatory study, and will have no credit value as a part of the required work of the course.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

Credits Required

The degree of Bachelor of Science in Agriculture will be conferred upon any student who satisfies the above entrance requirements, and receives one hundred and forty-four hours credit for college courses and a satisfactory thesis.

Required and Elective Courses

Of the one hundred and forty-four hours credit required for the degree, one hundred and fourteen hours are definitely prescribed, as indicated in the curriculum below. Students not required to take work in military science must offer two additional elective credits to make up the total of one hundred and fourteen. To secure the remaining thirty hours elective courses may be offered. Courses amounting to twenty hours' credit in all must be elected in the department in which the student elects to take his thesis, or such courses as may be prescribed by his class officer. Courses amounting to ten hours in all must be elected from the courses given in the College of Arts and Sciences.

Class Officer

The Dean of the College of Agriculture will act as class officer for all freshmen and sophomore students in agriculture. The head of the department in which the student elects thesis work will be his class officer for the junior and senior years.

Theses

Every candidate for the degree of Bachelor of Science in Agriculture will be required to prepare a thesis on some subject relating to a special branch of agriculture or other department of science applied to agriculture. The thesis must be based upon the students' individual practical work. Before the close of the sophomore year each student shall indicate to the dean the department in which he wishes to take his thesis. Theses may be elected in the following departments:

Agronomy and soils	Education
Agricultural chemistry	Farm management
Animal husbandry	Horticulture
Dairying	Poultry husbandry
Botany and bacteriology	Entomology

The subject of the thesis with the approval of the head of the department in which it is to be taken must be presented in writing to the dean not later than November first of the school year in which the student is a candidate for a degree. The completed thesis must be presented to the head of the department concerned for his approval not later than thirty days prior to commencement day.

TRAINING FOR TEACHERS OF AGRICULTURE

Students who desire preparation for teaching agriculture in the schools of West Virginia may secure a state teachers' certificate in addition to the degree of Bachelor of Science in Agriculture by taking the regular curriculum outlined below with the substitution of courses 1, 2, 3, 4, 5, 6, 7, and 16 in Education in place of 20 hours of the elective courses in the junior and senior years.

This course will give the student ample training in the fundamentals of modern agriculture for teaching in secondary schools, and also in the necessary work in Education. The demand for teachers of agriculture in high schools and academies is much in excess of the supply of teachers and this promises to be true for many years to come.

CURRICULUM FOR THE B.Sc.Agr. DEGREE

Courses in the College of Agriculture

Subject	*Course numbers*	*Credit hours*
Agronomy:—		
Soils	1	3
Farm crops	2	3
Soil fertility	3	3
Animal Husbandry:—		
Breeds of live stock	1	3
Elementary animal breeding	2	3
Feeds and feeding	3	3
Stock judging	8	1
Chemistry:—		
Soil chemistry	1	3
Dairying:—		
Buttermaking	1	3
Testing dairy products	2	2
Entomology:—		
*General entomology	1	4
Economic entomology	2	3
Farm management:—		
Farm management	1	3
Rural economics	2	3
Horticulture:—		
Plant propagation	1	3
Practical pomology	2	3
Vegetable gardening	3	3
Evolution	12	3
Veterinary science:—		
*Anatomy and physiology	1	3
Thesis		1 or 2
Elective		20

Courses in Other Colleges

Botany:—		
General botany	1, 2	8
*Plant physiology	12	3
Bacteriology	1	3
Chemistry:—		
Inorganic chemistry	1, 2	8
Economics:—		
Principles of economics	1	5
English:—		
Composition and rhetoric	1, 2	6
Survey of English literature	26, 27	4
Fine arts:—		
Elementary drawing	16	2
Mechanical engineering:—		
Woodworking	2	2
Mechanical drawing	23	2
Forge shop	7	1
Physics:—		
Elementary physics	1, 2	8
Zoology:—		
Animal biology	1	4
*Vertebrate zoology	2	4
†Military science	1 to 4	4
Elective (College of Arts and Sciences)		10
Total		144

* Either course of each of the following groups of two courses, may be chosen as the student desires: Veterinary science 1 or Botany 12: Zoology 2 or Entomology 1.

† Students who do not take military science (see page 248) must offer two additional credits for elective courses in place of the two credits in that subject.

SCHEDULE OF COURSES IN AGRICULTURAL CURRICULUM

Freshman Year

First semester		*Second semester*	
Physics 1 M.W.F., 8:00; Tu. or Th., 2:00	4	Physics 1 M.W.F., 8:00; T. or Th., 2:00	4
Freehand drawing (Fine arts 16) T.Th., 8:00 to 11:00	2	Mech. drawing (Eng. 23) W.F., 2:00	2
English 1 M.W.F., 9:00	3	English 2 M.W.F., 9:00	3
Chemistry 1 M.W.F., 11:00; M., 2:00	4	Chemistry 2 M.W.F., 11:00; M., 2:00	4
Forge shop (Eng'g 7) Sec. 2, T.W., 2:00. 9 weeks. Sec. 3, Th.F., 2:00. 9 weeks.	1	Plant propagation (Hort. 1) T. Th., 10:00; T., 2:00	3
Breeds of livestock (An. Husb. 1) T.Th., 11:00; S. 9:00-12:00	3	Stock judging (An. Husb. 8) S., 9:00-12:00	1
Military science 1 M.T.W.Th., 12:00	1	Military science 2 M.T.W.Th., 12:00	1

Sophomore Year

Botany 1 W.F., 9:00; M.W., 2:00	4	Botany 2 W.F., 9:00; M.W., 2:00	4
Woodshop (Eng. 2) M.Th., 8:00-11:00	2	English 27 T.Th., 11:00	2
English 26 T.Th. 11:00	2	Buttermaking (Dairying 1) T.Th., 8:00-11:00	3
Soils (Agronomy 1) W.F., 8:00; Th., 2:00	3	Testing dairy products (Dairy 2) M. 8:00-11:00	2
Practical Pomology (Hort. 2) W. 11:00, F. 10:00, F. 2:00	3	Vegetable gardening (Hort. 3) W.F., 11:00; Th., 2:00	3
Military science 3 M.T.W.Th., 12:00	1	Farm crops (Agronomy 2) W.F., 8:00; T., 2:00	3
		Military science 4 M.T.W.Th., 12:00	1

Junior Year.

First Semester.		Second Semester.	
Invertrebrate zoology (Zool. 1) T.Th., 8:00; Th.F., 2:00	4	Bacteriology 1 T.Th., 9:00; T., 2:00	3
*Plant physiology (Botany 12) T.Th., 10:00; T., 2:00	3	*Vertrebrate zoology (Zool. 2) T.Th., 8:00; Th.F., 2:00	4
*Anatomy and physiology (Vet. Science 1) M.T., 10:00; T., 2:00	3	*General entmology (Ent. 1) T.Th., 8:00; Th.F., 2:00	4
Soil chemistry (Agr. Chem. 1) M.W.F., 8:00	3	Farm management 1 M.W.F., 8:00	3
Feeds and feeding (An. Husb. 3) M.W.F., 11:00	3	Soil fertility (Agronomy 3) T.Th., 10:00; S. 9:00-12:00	3
Elective, agriculture	5		

Senior Year

Economics 1 8:00	5	Rural economics (Form management 2) T.Th.S., 8:00	3
Evolution (Horticulture 12) M.T., 10:00; M., 2:00	3	Economic entomology (Ent. 2) M.T., 10:00; T., 2:00	3
Elective, agriculture	5	Elective, agriculture	5
Elective, arts and sciences	5	Elective, arts and sciences	5
		Thesis	1

*Either one or the other of these courses may be elected by the student.

COURSES OF INSTRUCTION

Only the technical courses offered primarily for the students in agriculture are described here. For detailed description of the other courses listed on page 167 as required or elective in the agricultural curriculum, see the announcement of courses in the College of Arts and Sciences and the College of Engineering.

Courses marked by a star may be offered for credit in the College of Arts and Sciences.

AGRICULTURAL EDUCATION

12. **Agricultural Education.** (2 Hrs.) Required of juniors who desire a state teacher's certificate. (See page 78.) Nature study and agriculture in the elementary and secondary schools. Organization of programs of studies and the principles and methods of teaching. Observation of elementary and secondary classes in nature study and agriculture. Lectures and recitations, reading of literature, and practical teaching.

Second semester: T. Th., 11:00; 27 M.

AGRONOMY

Associate Professor COOK and Mr. NUCKOLS.

*1. **Soils.** (3 Hrs.) Required of sophomores. Lectures and recitations upon the formation, kinds, and physical and chemical properties of soils; conditions of soil moisture, its movements, amount available to crops and conservation; relation of air to soils, temperature of soils, effects of drainage, objects and methods of tillage; physicial effects of lime on soils; laboratory work and experiments with soils.

First semester: W. F., 8:00; Professor COOK, 4 M., Laboratory, Th., 2:00.

*2. **Farm Crops.** (3 Hrs.) Required of sophomores. Lectures and recitations on cereals, forage crops, potatoes and miscellaneous crops; seeding, cultivation, marketing and history; time and methods of planting and preparation of soil.

Second semester: W. F., 8:00; Professor COOK, 4 M., Laboratory, Tu., 2:00.

3. **Soil Fertility.** (3 Hrs.) Required of juniors. For the first half of the semester, the work will be devoted to the study of agricultural

chemistry, chemical changes taking place in the breaking down of vegetable matter and manure to form humus and plant food, chemical changes taking place in soils and study of commercial fertilizers. The latter half of the semester will be devoted to studying the practical application of agricultural chemistry to the growing of crops, with field observations.

Second semester. Tu., Th., 10:00; Professor COOK, 4 M., laboratory, Sat., 9:00-12:00.

4. Farm Machinery. (2 Hrs.) Elective. The study of power machinery, setting up and taking apart grain binders, mowers, drills, corn harvesters, corn planters, plows, cultivators, and proper adjustments of machines to perform accurate work.

First semester: F. 11:00; laboratory, first half-semester, F., 2:00, second half-semester, Sat. 8:00-12:00.—Professor COOK, 4 M.

5. Rural Engineering. (3 Hrs.) Elective. Lectures on tile drainage, construction of fences, barns and sheds, feed racks for cattle and sheep, the uses of concrete on the farm, and the methods of determining the area of fields; practice in laying out tile drains and in drafting working drawings. Prerequisite: Agronomy 1 and Engineering 23.

First semester: W. Th., 9:00; Professor COOK, 4. M. laboratory W., 2:00.

6. Soil Surveying and Mapping. (2 Hrs.) Elective. This course will take up the mapping of a selected area and making a detailed survey of the different types of soils found in it. Samples of soils will be taken and a mechanical analysis made of same, to determine the names of the types mapped. Prerequisites: Agronomy 1 and 2.

First half- semester: Sat., 8:00-12:00; second half-semester F. 2:00 and hours to be arranged. Professor COOK, 4 M.

7. Corn Growing and Judging Grains. (3 Hrs.) Elective. Requirements of the growth of the corn plant, selecting, storing, testing, grading, planting, cultivating and harvesting; the cost of production and use of the crop. Prerequisite: Agronomy 1 and 2.

Second semester: Tu. W., 9:00; Professor COOK, 4 M.; laboratory, W. 2:00.

8. Plant Breeding and Advanced Agronomy. (2 Hrs.) Elective. A general study of plant breeding; what has been accomplished, and the value of plant breeding in obtaining new and better varieties of plants. Practice work in plant breeding. Prerequisite: Agronomy 2, and Horticulture 12.

Summer: hours to be announced; Professor COOK, 4 M.

9. Plant Industry Seminar. (1 Hr.) Elective for juniors and required of seniors and graduate students. Papers will be prepared and read before the members of the class, upon subjects pertaining to the improvement of soils and plants, and general discussions on the papers presented. Students doing thesis work will report from time to time upon their investigations. This course may be continued and an additional credit given for each semester's work.

Second semester: M., 2:00; Professors COOK and ALDERMAN.

10. Thesis. (1 Hr.)

ANIMAL HUSBANDRY

Professor ATKESON.

***1. History and Characteristics of Breeds.** (3 Hrs.) Required of freshman. This course deals with all the improved breeds of live stock. The origin, distribution and characteristics of each breed will be studied. Practice in stock judging and study of living animals of various types will be given as far as possible.

First semester: T. Th., 11:00; laboratory, Sat., 8:00-12:00; 8 M.

2. Elementary Animal Breeding. (3 Hrs.) Required of sophomores. A study of the principles of animal breeding; heredity; atavism; variation; selection; correlation; in-breeding; cross breeding and grading; influence of climate and environment upon habits and development. Prerequisite: Animal Husbandry 1.

First semester: Tu., 10:00, F., 11:00; laboratory, Tu. 2:00; 8 M.

3. Feeds and Feeding. (3 Hrs.) Required of juniors. Laws of nutrition; composition and digestibility of feeding stuffs; feeding farm animals; feeding for milk, muscle, and fat; sources of food; how animals use food; study of rations and feeding standards.

First semester: M. W. F., 11:00; 8 M.

4. Live Stock Management. (3 Hrs.) Elective. Care and handling of domestic animals in barn and fields; the management of flocks and herds; the care of work animals and driving horses. Prerequisites: Animal Husbandry 1, 2 and 3.

First semester: M. W., 9:00, F. 2:00; 8 M.

5. Advanced Animal Husbandry. (3 Hrs.) Elective. Advanced work in animal husbandry arranged to meet the needs of the students. Study and comparison of the literature of the subject. Class discussions. Prerequisites: Animal Husbandry 3 and 4.

First semester: M. Tu., 9:00. W. 2:00; 8 M.

6. Beef Production. (2 Hrs.) Elective. A systematic study of the most successful and economical methods of producing beef cattle, including a study of market types, fattening for market and marketing. Prerequisites: Animal Husbandry 1, 3 and 4. Given in alternate years with 7.

Second semester: F., 9:00, Th. 2:00; 8 M.

7. Pork and Mutton Production. (2 Hrs.) Elective. A study of the different breeds of sheep and hogs and the best and most economical methods of producing pork and mutton. Prerequisites: Animal Husbandry 1, 3 and 4. Given in alternate years with 6.

Second semester: F., 9:00. Th. 2:00; 8 M.

8. Stock Judging. (1 Hr.) Required of freshmen. The work consists of score card practice in judging horses, cattle, sheep, and swine, and familiarizes the student with the general points to be observed in judging live stock.

Second semester: S., 9:00; 8 M.

9. The Horse. (2 Hrs.) Elective. A study of the most successful methods of growing and developing young horses, including the best method of preparing horses for market. Prerequisites: Animal Husbandry 1, 2 and 3.

First semester: F., 9:00, Th., 2:00; 8 M.

10. Advanced Stock Judging. (2 Hrs.) Elective. Judging market classes and all breeds of pure bred animals; judging groups of four or more the same as at country fairs. Trips will be made to stock farms where students may have opportunity to judge and observe the man-

agement of flocks and herds by successful stockmen. Prerequisites: Animal Husbandry 1 and 8.

Second semester: M. T., 2:00; 8 M.

11. **Advanced Animal Breeding.** (3 Hrs.) Elective. This course embraces a general study of the principles of breeding, and a historical study of their results, with features relating to higher breeding of pure bred stock. Prerequisites: Animal Husbandry 1, 2, 8, 10 and Horticulture 6.

Second semester: M. W. F., 11:00; 8 M.

AGRICULTURAL CHEMISTRY

Professor HITE.

1. **Soil Chemistry.** (3 Hrs.) Required of juniors. A course of lectures including the chemistry of soil formation, deterioration and improvement, and having to do primarily with the maintainance of soil fertility. Soil troubles and possibilities in West Virginia receive special attention. Lecture experiments are supplemented by laboratory, field and greenhouse tests. Prerequisites: Chemistry 1 and 2.

First semester: M. W. F., 8:00.

2. **Advanced Agricultural Analysis.** (5 Hrs.) Elective for seniors. A critical study of prescribed agricultural chemical methods and agricultural problems consisting essentially of analytical work. The course is intended for those who would extend a good general knowledge of analytical chemistry to meet the demands of experiment stations, and food and fertilizer controls. Prerequisites: Chemistry 1, 2, 4, 5, and Agricultural Chemistry 1.

First semester: 5 hours a week; hours to be arranged.

3. **Advanced Agricultural Analysis.** (5 Hrs.) Elective for seniors. A continuation of Course 2.

DAIRY HUSBANDRY

Assistant Professor LUEDER.

1. **Buttermaking.** (3 Hrs.) Required of sophomores. This course gives the student a practical knowledge of both home dairying and creamery management, dealing with the care and handling of milk,

separation of cream, ripening of cream by means of artificial starters, use of acid test, the making and marketing of butter.

Second semester: Tu. Th., 8:00-11:00; 6 M.

2. Testing Dairy Products. (2 Hrs.) Required of sophomores. A study of the composition of milk; different tests for butter fat; tests for preservatives in dairy products; use of the lactometer; calculation of butter yields and butter analysis.

Second semester: M., 8:00-12:00; 6 M.

3. Advanced Dairying. (3 Hrs.) Elective. Recitations and laboratory work on the growing and feeding of soiling and forage crops for dairy cattle; the use of the silo; study of rations and feeding cattle for milk production; designing dairy buildings and dairy sanitation. Prerequisites: Dairying 1, Animal Husbandry 3, Veterinary Science 1.

First semester: M. Tu., 11:00; W., 2:00; 6 M.

4. Dairy Cattle. (3 Hrs.) Elective. A study of each of the improved dairy breeds with special reference to families and individuals; tracing of pedigrees; requirements for advanced registry and the methods of making tests for official records. Afternoon practice in judging dairy cattle. Prerequisites: Animal Husbandry 3, Veterinary Science 1.

First semester: M. Tu., 9:00; M., 2:00; 6 M.

ENTOMOLOGY

Associate Professor PEAIRS.

***1. General Entomology.** (4 Hrs.) Elective. A general survey of the structure, classification and habits of insects. Lectures and recitations, laboratory dissections, and the classification of the student's collection. Prerequisite: Zoology 1.

Second semester: Tu. Th., 10:00; laboratory, Th. F., 2:00; A.

2. Economic Entomology. (3 Hrs.) Required of seniors. Insects of economic importance; their life histories and habits as related to their control, with special consideration of general farm methods for the control of insects affecting staple crops, and of spraying machinery and insecticides for combating fruit and truck insects. Prerequisites: Zoology 1, (and Entomology 1, if possible).

Second semester: M. Tu., 10:00; laboratory Tu., 2:00; A.

FARM MANAGEMENT

Professor ————————

*1. **Farm Management.** (3 Hrs.) Required of juniors. Lectures upon choosing, equipping and operating a farm; types of farming; rental systems; farm labor; cost of production; successful marketing; farm records and accounts; different phases of specialized and general farming; rotations; fencing and buildings; management of manure and fertilizers; preparation of plans for the organization and management of specific farms. Prerequisite: Agronomy 1 and 2.

Second semester: M. W. F., 8:00.

*2. **Rural Economics.** (3 Hrs.) Required of seniors. The study of economics as related to all phases of rural life.

Second semester: Tu. Th. Sat., 8:00.

3. **Advanced Farm Management.** (3 Hrs.) Elective. A continuation of Farm Management 1, in the further study of farm operations and cost of production. Prerequisite: Agronomy 1 and 2, and Farm Management 1.

4. **History of Agriculture.** (3 Hrs.) Primarily for seniors. Elective. The history of agriculture beginning with ancient references and tracing it through all the stages of its development. A study of early Agricultural Experiment Stations and their work will be taken up, as well as a study of our own Experiment Stations and the U. S. Department of Agriculture, and their work in recent years.

Second semester: Hours to be arranged.

5. **Field Work.** Summer School. Prerequisite: Farm management I. Hours to be arranged.

6. **Thesis.** (1 Hr.) Both semesters: hours to be arranged.

FARM OPERATIONS.

Committee: Professors ALDERMAN, ATWOOD and COOK.

Farm Operations. (No credit.) Required of all students entering the College of Agriculture after June 1, 1912. In event of their failure to pass the examination in **Farm Operations** by the end of their sophomore year students will be required to work one summer on the Experiment Station farm or for the same period on some farm approved

by the committee in charge. Weekly reports will be required and a final examination given at the beginning of the junior year. The examination will test the student's knowledge of every day farm operations, such as feeding and care of live stock, familiarity with agricultural implements and their uses, knowledge of field and orchard crops, fertilizers, cultural methods and allied subjects. Opportunity will be given for a demonstration of the student's ability to do practical farm work, such as harnessing a team, driving, plowing, milking and other operations. Previous experience in specialized farming, such as market-gardening, nursery work, bee keeping, poultry raising, etc. will be considered and proper credit given the student.

HORTICULTURE

Professor ALDERMAN, Mr. AUCHTER and Mr. SUTTON

*1. **Plant Propagation.** (3 Hrs.) Required of freshmen. A practical course on the propagation of agricultural plants; preparing the seed bed, seed testing, planting seed in greenhouse and field; propagation by cutting, layering, grafting and budding; nursery practice. The same course is offered as an elective in the summer school.

Second semester: Tu. Th., 10:00; laboratory Tu. 2:00; Mr. SUTTON, 27 M.

2. **Practical Pomology** (3 Hrs.) Required of sophomores. A study of the planting and management of orchards, including the question of location, air drainage, frosts and winds, selection of nursery stock, orchard plans, soils, fertilizers, cultivation, pruning, sprays and spraying, spray machines, harvesting and packing. Prerequisite: Horticulture 1.

First semester: W., 11:00; F., 10:00; laboratory, M. 2:00; Mr. AUCHTER, 27 M.

3. **Elementary Gardening.** (3 Hrs.) Required of sophomores. The growing of vegetables for home use and market, the construction and management of hot beds and cold frames, garden soils and their treatment, cultivation, fertilizers and manures, garden plans. Prerequisite: Horticulture 1.

Second semester: W.F., 11:00; laboratory, Th., 2:00; 27 M.

4. **Systematic Pomology.** (3 Hrs.) Elective. The lectures, reference reading and recitations of this course will cover the history, botany and classification of apples, pears, peaches, plums, cherries and grapes and their adaptation to West Virginia conditions. The

laboratory work will include a careful study and description of the fruits themselves aiming towards a thorough knowledge of West Virginia varieties. Students will be given practical training in judging and scoring fruit exhibits and will have entire charge of the annual fruit show held at the College. Prerequisites: Horticulture 1 and 2.

First semester: M. Tu., 9:00; Professor ALDERMAN, 27 M.; laboratory, M., 2:00; Professor ALDERMAN and Mr. AUCHTER, 27 M.

5. Small Fruits. (2 Hrs.) Elective. Lectures, recitations and discussions covering care and management of small fruit plantations, varieties and their adaptation to West Virginia soils and climate. Laboratory work on planting, pruning, training and caring for small fruits. Frequent trips will be made to the Experiment Station farm to study the experimental plants and varieties under test there. Prerequisities: Horticulture 1 and 2. The same course is offered in the summer school.

Second semester: Th., 9:00; laboratory Th., 2:00; Mr. SUTTON, 27 M.

6. Greenhouse Construction and Management. (3 Hrs.) Elective. Lectures and discussions upon modern greenhouse construction, heating, ventilation, adaptation of various types of houses to special crops and conditions. Laboratory work in drafting and designing of greenhouses and actual work in the greenhouse throughout the term. Prerequisites: Horticulture 1 and 3.

First semester: W., 9:00; Laboratory W., 2:00 and one hour to be arranged; 27 M.

7. Commercial Orcharding. (3 Hrs.) Elective. A study of the management of commercial orchards in West Virginia. Lectures, recitations and reference reading, covering harvesting, marketing, and storing of fruit, transportation, cooperation, general and special markets. Laboratory work on pruning, spraying, grading and packing of fruit. Prerequisites. Horticulture 1 and 2.

First semester: M. Tu., 9:00; laboratory, W., 2:00; Mr. AUCHTER, 27 M.

8. Advanced Market Gardening. (3 Hrs.) Elective. Designed for students who will take up practical market gardening work. The study and management of commercial enterprises, growing of special crops on a large scale, rotation of crops, manures, packing and mar-

keting. Visits to some markets and commercial plants. Prerequisites: Horticulture 1 and 2.

Second semester: W. F., 9:00 laboratory, W., 2:00; 27 M.

9. Advanced Practical Pomology. (1 or 2 Hrs.) A trip occupying one week's time will be made through the fruit regions of Eastern Virginia, Virginia, Maryland and Pennsylvania, with probably a short visit at the Department of Agriculture, Washington; D. C. As many orchards as possible will be visited, and a detailed report will be required. The cost of this trip will probably not exceed forty dollars. In case two hours credit is desired a certain amount of reference work will be outlined for the student and conferences will be held during the term. Prerequisites: Horticulture 1 and 2.

First semester: Professor ALDERMAN.

10. Plant Industry Seminar. (1 Hr.) Same as Agronomy 10. Designed for juniors, seniors and graduate students in agronomy and horticulture. Elective for juniors, required of seniors and graduates. Papers will be prepared and read by the members of the class upon subjects pertaining to the improvement of soils and plants and general discussions held upon the papers presented. Students doing thesis work will report from time to time upon their investigations. This course may be continued more than one year and an additional credit given for each semester's work.

Second semester: M., 2:00; Professor ALDERMAN and COOK.

11. Thesis. (2 Hrs.) Required of seniors specializing in horticulture. The student will conduct an investigation throughout the year in some phase of the horticultural work under the direction of Professor Alderman. Students should arrange their problem before the close of their junior year so that materials may be on hand and no delay necessary the following year.

First and second semester: hours to be arranged; Professor ALDERMAN.

***12. Evolution and Heredity.** (3 Hrs.) Required of seniors. Lectures, recitations and reference reading upon the problem of variation, heredity, breeding and selection from a purely experimental standpoint. Various evolution theories will be discussed and laboratory work upon variation, correlation and biometrics will be performed. This course will be a basis for advanced work in plant and animal breeding. Prerequisites: Horticulture 1, Botany 3 and 4, Zoology 1.

First semester M. Tu., 10:00; laboratory, M., 2:00 or hours to be arranged; Professor ALDERMAN, 27 M.

13. Plant Breeding. (3 Hrs.) Elective. The practical application of the theories of evolution to the improvement of fruits, flowers and vegetables. Variation, selection and heredity as applied to the problems of the plant breeder. Laboratory work in crossing, breeding and selection. Careful observations will be made on the breeding plats at the Station Farm. Prerequisite: Horticulture 12.

Second semester: M. Tu., 9:00; Professor ALDERMAN, 27 M.; laboratory, hours to be arranged; Mr. SUTTON.

14. Landscape Gardening. (3 Hrs.) Elective. An elementary course in ornamental and landscape gardening, with special reference to the beautifying of the home grounds. Prerequisite: Horticulture 1.

Second semester: Th., 9:00; laboratory, F., 2:00; 27 M.

Graduate Work. An exceptional opportunity is offered for investigational work in Horticulture. The small fruit plantation, the breeding plats, the truck garden, the hotbeds and the three greenhouses furnish excellent facilities and a rich fund of material for investigation work. Orchards in the vicinity of Morgantown also offer good opportunities for experimental work in renovation, fertilizing, pruning, spraying and other similar lines of work. A large and well equipped library containing all the leading horticultural publications and periodicals, an important item to research students, is open at all times for student use.

POULTRY HUSBANDRY

Assistant Professor ATWOOD

1. Poultry Breeds and Feeding. (3 Hrs.) Elective. Lectures, text book study and recitations on the origin, history and characteristics of the breeds of domestic poultry, and poultry feeding.

First semester: M. W. F., 9:00.

2. Poultry Methods. (3 Hrs.) Elective. Lectures, text book study and recitations on incubation, brooding, poultry house construction, killing and marketing poultry, and poultry diseases. Prerequisite: Poultry Husbandry 1.

Second semester: M. W. F., 9:00.

3. Practice in Poultry Methods. (3 Hrs.) Elective. Practice work in the operation of incubators and brooders, feeding chicks, and in the care and management of mature fowls. Prerequisite: Poultry Husbandry 1 and 2.

Second semester: hours to be arranged.

VETERINARY SCIENCE

Assistant Professor LUEDER.

1. **Anatomy and Physiology.** (3 Hrs.) Elective. A systematic description of the bones, muscles, viscera, vascular, lymphatic and respiratory system. The structure of the ox, sheep, and pig, as contrasted and compared with that of the horse. The functions of the various organs and tissues of the body, the chemical constitution and physical laws which effect its growth, reproduction, and development.

First semester: Tu. Th., 11:00; laboratory, Tu., 2:00; 6 M.

2. **Diseases of Farm Animals and Materia Medica.** (3 Hrs.) Elective. A study of the important diseases of all domestic animals, methods of treatment, and drugs for their cure. Prerequisite: Veterinary Science 1.

Second semester: W. F., 8:00; F., 2:00; 6 M.

3. **Clinic.** (1 Hr.) Elective. Clinical work, giving the student a practical knowledge of handling and studying all kinds of diseased animals in the hospital; practical work in this course accompanies Veterinary Science 1 and 2.

First and second semester: hours to be arranged; 6 M.

DIVISION OF AGRICULTURAL EXTENSION

C. R. TITLOW, *Director.*

E. W. SHEETS, *Assistant.*

The principal value of the Agricultural College as a teaching factor, is the training it gives young people who take its courses, in residence. The Agricultural Experiment Station, as a national adjunct to the College, has an important field in discovering new truth pertaining to agriculture. If the work were thus limited, only a small percent. of the people of the state would receive direct and practical benefit from the work of the College. The same economic principle that justifies the expenditure of money for educating those who are able to attend the classes at the College, also justifies the expenditure of money in taking instruction from the College to those who are not able to come to it.

For the purpose, the Division of Agricultural Extension of the College was formed.

To enable this division to reach the greatest possible number of people of the state, it is conducting its work through the following forms:

1. Agricultural schools and schools of home economics, held for one week at suitable centers.

2. Demonstrations in pruning fruit trees, spraying fruit trees, thinning fruit, packing fruit, mixing commercial fertilizer, and corn variety tests.

3. The encouragement of the teaching of agriculture in the rural schools by:

(a) Organizing boys' and girls' clubs for growing and judging corn, growing and canning vegetables,

(b) The monthly bulletin, West Virginia School Agriculture,

(c) Lectures at teachers' institutes, granges, clubs and other organizations.

4. Agricultural railway trains, with lectures and exhibits on Horticulture, soils, farm crops and market gardening.

5. Educational exhibits at state and county fairs.

6. Correspondence: This includes the identification of plants and insects, inquiries covering agricultural problems, and assistance to the school, the home, or other organizations towards starting or advancing movements to increase the worth and dignity of a rural life.

For further information concerning the work of this division, address Director TITLOW for a special bulletin.

THE WEST VIRGINIA AGRICULTURAL EXPERIMENT STATION

STAFF

E. DWIGHT SANDERSON, B.Cc.Agr.
Director

BERT HOLMES HITE, M.Sc.
Vice Director and Chemist

WILLIAM EARL RUMSEY, B.Sc.Agr.
Entomologist

NAHUM JAMES GIDDINGS, M.Sc.
Plant Pathologist

HORACE ATWOOD, M.Sc.Agr.
Poultryman and Farm Superintendent

WILLIAM HORACE ALDERMAN, B.Sc.Agr.
Horticulturist

ISAAC SCOTT COOK, JR., B.Sc.Agr.
Agronomist

ARTHUR LINCOLN DACY, B.Sc.
Associate Horticulturist

FRANK BATSON KUNST, A.B.
Assistant Chemist

CHARLES EDWARD WEAKLEY, JR.
Assistant Chemist

JAN HENDRIK BERGHUIS-KRAK
Assistant Chemist

DAVID CARLTON NEAL, B.S.
Assistant Plant Pathologist

KRISTIAN HVISTENALL KNUDSEN
Assistant Chemist

HUBERT HILL, B.Sc.,M.Sc.
Assistant Chemist

EUGENE CURTIS AUCHTER, B.Sc.AGR.
Assistant Horticulturist

LUTHER FRANCIS SUTTON, B.Sc.B.S.AGR.
Assistant Horticulturist

SAMUEL BENTON NUCKOLS, M.Sc.AGR.
Assistant Agronomist

WILLIAM J. WHITE
Auditor

MARTHA A. STEWART
Librarian

URIAH BARNES, LL.B.
Secretary

THE WORK OF THE STATION

The Experiment Station is a distinct and separate department of the University, and was established by the Board of Regents in 1887, by authority of an act of Congress, known as the Hatch Act, which was passed on the 2nd day of March of that year. Further support was given by an act of Congress known as the Adams act, approved June 30, 1906. The funds for carrying on the operation of the station, with the exception of its earnings, are derived wholly from the national government. The aforesaid act in section 2 fully states the object and purposes of the Experiment Station as follows:

"That it shall be the object and duty of said experiment station to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaption and value of grasses and forage plants; the composition and digestibility of the different kinds

of foods for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches and experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories."

Bulletins and annual reports setting forth results of experiments and investigations conducted at the station are published for gratuitous distribution, and will be mailed to any citizen of the state applying for them. The station invites correspondence, suggestions, and advice from farmers and others interested in this work, and all such with reference to bulletins, experiments, or any matter relating to agriculture, will be welcomed and will receive careful and prompt attention. Correspondence should be addressed to the director of the station.

THE COLLEGE OF LAW

THE FACULTY

THOMAS EDWARD HODGES, LL.D., *President.*

CHARLES E. HOGG, LL.D., *Dean and Professor of Common Law Pleading, Court Practice and Federal Procedure*

WILLIAM P. WILLEY, A.B., A.M., *Professor of Equity Jurisprudence and Commercial Law*

JAMES RUSSELL TROTTER, A.M., PH.D., *Professor of Law.*

HISTORY

The College of Law was established in 1878. Since then the growth of this department has kept pace with that of the University, of which it is a part, and its attendance is now comparatively large. The College occupies four commodious lecture rooms, a reading room, and a library, to which students have free access.

LAW LIBRARY

The Law Library now contains about forty-five hundred volumes of well selected books. These consist of the official editions of the United States Supreme Court Reports, and the reports of the states of Massachusetts, New York, Pennsylvania, Virginia and West Virginia complete, and all of the other states to the Reporter System complete with the exceptions of Maryland, South Carolina, Maine, Rhode Island, Delaware and New Hampshire. The Law Library also contains the American Decisions, American Reports, Corporation Reports Annotated, Lawyers Reports Annotated, old and new series, American Probate Reports Annotated, and a large number of well selected text-books. It is in charge of a competent librarian and is open to the students of the University from eight a. m. to five p. m., and also from seven p. m.

to 9 p. m. In addition to this the Dean of the College of Law has placed his own library, consisting of nearly twenty-four hundred volumes, in his lecture room, to which the students have free access. This is a well kept, up-to-date private library, containing a large number of text-books, digests, encyclopedias and reports. There is a complete set of the Reporter System, state and federal, including those contained in the Dean's room and in the Law Library.

Arrangements have been made whereby the use of these two libraries is extended to the lawyers of the state by the payment of a small annual fee, the proceeds thus derived to be expended in the purchase of law books, as the property of the state.

ADMISSION

The requirements for the admission of students who are candidates for the degree of Bachelor of Laws are the same as candidates for the degree of Bachelor of Arts. See page 54.

After June 1, 1913, there will be required in addition to the above credit for not less than thirty-two hours in the College of Arts and Sciences or equivalent work done elsewhere. The credits secured must include six hours in rhetoric and composition (English 1 and 2). If the student lacks no more than one unit of the necessary preparation he may be admitted conditionally and complete his prepaation while carrying on the studies of the first year of the law course.

Admission as Special Students. Persons desiring to enter as special students in the College of Law must conform to the regulations of the university concerning special students.

DEGREES

BACHELOR OF LAWS

The degree of Bachelor of Laws will be conferred on any student who has satisfied all entrance requirements and has received for work in the College of Arts and Sciences and in the College of Law a total of 96 hours, (three years' work) distributed as follows:

(a) In the College of Arts and Sciences, 6 hours in addition to the 32 hours required for entrance to the College of Law. The total of 38 hours which must be offered for entrance and college credit after June 1, 1913 must include at least three hours in economics, at least four hours in argumentation and debate. (English 66 and 67) and a total of at least nine hours in history, psychology, logic, and ethics.

Students who are required to take military training may include not more than four hours of military science as part of the 38 hours.

(b) In the College of Law, 90 hours as indicated in the curriculum below.

MASTER OF LAWS

Holders of the degree of Bachelor of Laws from this University or from any other law school of equal rank may be admitted to candidacy for the degree of Master of Laws. So far as applicable the regulations for candidate for the degree of Master of Arts (See page 58) will govern candidates for this degree.

CREDIT TOWARD THE DEGREE OF A.B.

Not more than fifteen hours selected from the following courses may be counted toward the degree of Bachelor of Arts:

Domestic relations
Contracts
Criminal law
Constitutional law
Real property

EXAMINATION FOR ADMISSION TO THE BAR

It is made the duty of the law faculty according to the laws of the state to examine all applicants for admission to practice law. These examinations are held at the University on the first Wednesday after the first day of January, the first Wednesday in April, and the last Wednesday in September, in each year.

CURRICULUM IN COLLEGE OF LAW

First Year

First semester		*Second semester*	
Contracts	5 Hrs.	Real property	5 Hrs.
Criminal Law	3	Criminal procedure	3
Domestic relations	3	Bailments and carriers	3
Torts 1	2	Torts 2	2
Agency	2	Negotiable instruments	2
	15		15

Second Year

Evidence	3	Equity pleading	3
Equity jurisprudence 1	3	Equity jurisprudence 2	2
Insurance	3	Partnership	3
Sales	2	Corporations	3
Wills	3	Common law pleadings	4
Conflicts of laws	2		15
	15		

Third Year

Constitutional law	3	Administrative law	3
Damages	2	Legal documents	2
Courts and their officers	2	Municipal corporations	2
Court procedure	3	Actions and suits	2
Bankruptcy	2	Federal procedure	1
Court practice 1	3	Court practice 2	3
	15	Extraordinary remedies	2
			15

COURSES OFFERED IN THE COLLEGE OF LAW

Note:—The hours and days on which the following courses are to be given in 1912-13 are not announced because of the fact that the schedule of hours cannot yet be arranged. The complete schedule will be announced prior to September, 1912.

First Year

Contracts. (5 Hrs.) A comprehensive course covering the whole subject of contracts in theory and practice. It deals minutely with all the essential elements in the formation of the contract, as well as the essentials to a valid discharge of its obligations.

First semester: Professor WILLEY, 26 W.

Criminal Law. (3 Hrs.) Definition, nature and punishment of crime; classification of crimes; the mental element in crime; persons capable of committing crimes, and exemptions from responsibility; parties concerned in the commission of crime; overt acts, attempts, solicitations, and conspiracy; offences against the person; against the habitation; against property; against public health, safety, comfort, and morals; against public justice and authority; against the public peace; against the government and the law of nations; jurisdiction and former jeopardy.

First semester:

Persons and Domestic Relations. (3 Hrs.) Elementary law; nature of laws in general; rules for construction of statutes. Nature of relative rights; essentials of valid marriage; rights and disabilities of husband and wife; antenuptial and postnuptial settlements; separation and divorce; legitimacy of children and legitimation of bastards; rights of parents and children and their respective duties; guardian and ward; infants, persons non compos mentis and aliens; master and servant and their respective liabilities and rights as to each other and to third persons.

First semester: Professor TROTTER, 28 W.

Torts 1. (2 Hrs.) Principles of liability; state, judicial, and executive acts; quasi judicial acts; parental and quasi parental authority; the remedies for torts; assault and battery, false imprisonment, injuries to family relations, defamation, fraud, malice, deceit, slander

of title, malicious prosecution, etc.; duties regarding property, trespass, injuries to reversion, waste, conversion; injuries between tenants in common, nuisance, negligence, etc.; special relations of contract and tort.

First semester:

Torts 2. (2 Hrs.) A continuation of Torts 1.

Second semester:

Agency. (2 Hrs.) The relation of the principal and agent; the performance of the agent's power and the delegation thereof; determination of the agency; construction of authority; rights and liabilities between principal and third persons; rights and liabilities between agents and third persons; rights and liabilities between principal and agent.

First semester:

Criminal Procedure. (3 Hrs.) Apprehension of persons and property; preliminary examination, bail, and commitment; the pleadings; the proof; trial and its incidents; proceedings after verdict; evidence.

Second semester:

Real Property. (5 Hrs.) The nature of real property; the different classes of estates with respect to quantity, quality, time of enjoyment, and number of tenants; executory devises, requisites of a valid deed; methods of acquiring title, title by adverse possession; prescription, and methods and forms of abstracting title to real estate.

Second semester: Professor TROTTER, 28 W.

Bailments and Carriers. (3 Hrs.) The course covers all the various forms of bailments, but deals specifically with common carriers and their liability under all the conditions in which the passenger or shipper may seek to hold them responsible.

Second semester: Professor WILLEY, 26 W.

Negotiable Instruments. (2 Hrs.) A study of "The Negotiable Instruments Law" as adopted by West Virginia as a basis; together with a discussion of the principles governing negotiable paper and a demonstration of the practical application of these principles.

Second semester: Professor WILLEY, 26 W.

Second Year

Evidence. (3 Hrs.) The subject of evidence is considered from two standpoints; first, the scientific method of searching for truth; secondly, the limitation for the production of evidence in a judicial inquiry.

First semester: Professor WILLEY, 26 W.

Equity Jurisprudence 1. (3 Hrs.) The origin and development of equity jurisprudence; the fundamental principles and maxims which constitute its foundation; the scope and limitation of its jurisdiction; the three principal divisions of equitable remedies, acident and mistake, fraud, and trusts; special jurisdiction, such as equitable liens, assignments, specific performance of contracts, and fiduciary obligations.

First semester: Professor WILLEY, 26 W.

Insurance. (2 Hrs.) History, nature and requisites of the contract; parties; insurable interest; the making of the contract; the consideration; consent of the parties; insurance agents and their powers; waiver and estoppel; rights under the policy; standard fire policy; terms of the life policy; marine insurance; accident insurance; guaranty, credit, and liability insurance.

First semester:

Sales. (2 Hrs.) The nature and formalities of the contract of sale; bargain and sale; contract to sell; acceptance and receipts, seller's duties—buyer's rights; buyer's duties—seller's rights.

First semester: Professor TROTTER, 28 W.

Wills and the Administration of Estates. (3 Hrs.) The instrument—form and contents; execution—signing and attestation; general

requisites and validity; mental capacity; undue influence; revocation, revival and republication; probate and contest; construction and operation; legacies and devises; executors and administrators, their powers, duties, liabilities and compensation; distribution of the estates of decedents, including the payment of debts, legacies and distributive shares; settlement of estates.

First semester: Professor TROTTER, 28 W.

Conflict of Laws. (2 Hrs.) The situs of the person; status of personal capacity, of marriage, of legitimacy and adoption, of fiduciaries, of chattels and of debts, transfer of personal property, of contracts; the validity of contracts as dependent upon situs, including their interpretation and discharge; the situs of torts and crimes; remedies including marriage and divorce.

Second semester: Dean HOGG, 27 W.

Equity Jurisprudence 2. (2 Hrs.) Reformation and rescissions of contracts for mistake, fraud, misrepresentation, concealment, undue influence, illegality.

Second semester: Professor WILLEY, 26 W.

Equity Pleading. (3 Hrs.) The nature and object of pleadings in equity, the practical rules which are recognized by courts of equity in the United States, the modifications which have been made by statute in West Virginia, and the effect of the several pleadings in their relation to each other.

Second semester: Professor WILLEY, 26 W.

Partnership. (3 Hrs.) Purpose, partners, formation, incidents, rights and duties, powers, liability of firms, liability of partners, actions by and against firm, termination and dissolution, partnership assets, accounting, limited partnerships.

Second semester:

Corporations. (3 Hrs.) Definition and nature; creation and citizenship; effect of irregular incorporation; relation between the corporation and its promoters; powers and liabilities of corporation; relation to the state; dissolution; membership; management—officers and agents; rights and remedies of creditors; foreign corporations.

Second semester: Professor TROTTER, 28 W.

Common Law Pleading. (4 Hrs.) The course covers the entire subject of common law pleading and the modifications produced by statute and the more liberal principles of modern procedure.

Second semester: Dean HOGG, 27 W.

Third Year

Constitutional Law. (3 Hrs.) Definition and general principles; the relation of the Federal Government to the states; establishment and amendment; construction and interpretation; the co-ordinate branches of government; federal executive; federal jurisdiction; powers of congress; executive, legislative, and judicial power in the states; the police power; power of taxation; the right of eminent domain; civil rights and their protection; political and public rights; constitutional guaranties in criminal cases; laws impairing the obligations of contracts; retroactive laws.

First semester: Professor TROTTER, 28 W.

Damages. (2 Hrs.) Definitions and general principles; compensatory and exemplary damages; bonds; interest; actions against carriers, telephone and telegraph companies; death by wrongful act; injuries to real property; breach of marriage contract.

First semester:

Courts and Their Officers. (2 Hrs.) Sources of judicial power; the Supreme Court of Appeals and its jurisdiction, original and appellate; the circuit courts and their jurisdiction, original and appellate; the county courts and their jurisdiction; inferior courts, including attorneys at law, their powers, duties and liabilities. Lectures and individual work in the law library.

First semester: Dean HOGG, 27 W.

Court Procedure. (3 Hrs.) Demurrer, its forms, kinds, office, effect, and the judgment thereon; pleas in abatement, their nature, form, filing, and the judgment thereon; pleas in bar, their nature, those of the general issue and special pleas; the issue, how and when made up, and how tried; abatement, revival and survival of actions; continuances; production of books, papers and documents generally upon the trial of an action.

First semester: Dean HOGG, 27 W.

Bankruptcy. (2 Hrs.) This course will embrace a consideration of the bankruptcy act; courts of bankruptcy and their jurisdiction; the filing of the petition, voluntary and involuntary, and the steps necessary to an adjudication in bankruptcy; appointment of referees, their qualifications, oath of office, number, jurisdiction, duties and compensation; appointment of trustees, their qualifications, duties and compensation; creditors' meetings, and the various other steps

usually taken in a bankruptcy case; as well as the usual forms in bankruptcy cases, including the petition, schedules, proof of claims, discharge of bankrupt, etc.

First semester: Dean HOGG, 27 W.

Administrative Law. (3 Hrs.) Executive, quasi judicial and quasi legislative functions, administrative discretion, administrative execution, and relief against administrative action.

Second semester: Professor TROTTER, 28 W.

Court Practice 1. (3 Hrs.) This course supplies the drill and discipline necessary to prepare the student for the trial tables. He is taught to apply legal remedies according to the common law and chancery systems of practice; to bring suits, draw papers, pleadings, briefs, etc.; to take the various steps incident to bringing a cause to trial, and to try it according to the rules of evidence, including the argument, charge, verdict, motion in arrest of judgment, writ of error. Appellate procedure is also included. The court is organized in all its details in strict conformity to the practice of the regular courts. Six hours attendance weekly is required.

First semester: Dean HOGG, 27 W.

Court Practice 2. (3 Hrs.) A continuation of Court Practice 1. Six hours attendance weekly is required.

Second semester: Dean HOGG. 27 W.

Legal Documents. (2 Hrs.) The drawing and annotation of affidavits; apprenticeship forms; bonds; assignments; contracts; bills of lading and of sale; deeds of warranty; quit claims, mortgages, deeds of trust, deeds of special commissioners and other persons holding a fiduciary character, and deeds of lease and release; mechanics' liens; notices; options; partnership papers; powers of attorney; promissory notes and other forms of security; protests; proxies; receipts; records and their authentication; wills and codicils thereto; declarations, demurrers and pleas; bills in chancery, and answers thereto; court orders; other forms; examination and abstracting of titles.

Second semester: Dean HOGG. 27 W.

Municipal Corporations. (2 Hrs.) Creation of Municipal corporations; scope of their power, their police and judicial powers; streets and highways; power of eminent domain; taxation; ordinances, officers, and agents; contractual liabilities; securities, limitation of indebtedness; legislative control; liabilities in tort, and duties relating to governmental affairs.

Second semester:

Actions at Law and Suits in Equity. (2 Hrs.) Parties to actions and suits, in general; parties plaintiff and defendant, in various specific instances in actions ex contractu and ex delicto; joinder of parties, embracing nonjoinder and misjoinder and their consequences; proceedings by and against lunatics and infants; the nature and forms of actions; issuance, service and return of process; the rules; change of venue; removal of causes from a state to a federal court.

Second semester: Dean HOGG. 27 W.

Federal Procedure. (1 Hr.) This course will embrace a consideration of the legal and equitable jurisdiction of the federal courts, and procedure therein at law and in equity from the institution of the suit to its termination, as well as many points of practice peculiarly applicable in these courts.

Second semester: Dean HOGG. 27 W.

Extraordinary Remedies. (2 Hrs.) Mandamus, quo warranto, prohibition, certiorari, and habeas corpus.

Second semester: Professor WILLEY, 26 W.

THE SCHOOLS OF MUSIC AND FINE ARTS

STAFF OF INSTRUCTION

LOUIS BLACK — Madera Hotel
Director of the School of Music and Head of the Department of Vocal Music

WILLIAM JACKSON LEONARD — 36 University Driveway
Head of the Department of Fine Arts

RUDOLPH WERTIME — South Park
Head of Piano Department

SUSAN MAXWELL MOORE, A.B. — Woman's Hall
Instructor in Music

EVA EMMA HUBBARD — 265 Academy Square
Instructor in Drawing and Painting

GRACE MARTIN SNEE, B.M. — 649 Spruce Street
Instructor on the Piano and Pipe Organ

MARGARET WINTON HORNE — University Driveway
Instructor in Violin

W. A. MESTREZAT — 57 Bridge Street
Assistant in Music (Wind Instruments)

HELEN LOVELAND TREAT — 353 Wilson Avenue
Assistant in Music.

FLORA RAY HAYES, A.B. — 480 High Street
Assistant in Music.

THE SCHOOL OF MUSIC

BUILDING AND EQUIPMENT

The school occupies the upper floor of Woodburn Hall, which contains well appointed rooms, supplied with pianos and other accessories. A new recital hall, seating 400 people, has been provided for lectures and students' recitals.

Commencement Hall, seating 1,500 people, contains a magnificent three-manual pipe organ, tubular pneumatic—built upon the universal wind-chest system and containing 76 stops and mechanical accessories, This organ, which receives power from an electric motor, is available for practice.

CONCERTS AND RECITALS

FACULTY CONCERTS

Faculty concerts are given at least three times a year, the last of the yearly series being the Commencement concert. All the members of the School of Music of Faculty participate in these concerts, though occasionally one member may give an individual recital.

STUDENTS CONCERTS

A student's concert is held each week. These concerts vary in grade from elementary to graduate and post graduate recitals. The object is to afford opportunity for the students to apply in public the proficiency that has been developed in the studio.

CHORAL SOCIETY SERIES

A series of choral society concerts, usually three in number, affords students an opportunity not only of singing the choral works of

the great masters but also of hearing the solo artists who are engaged.

Usually one of these concerts is given entirely by visiting artists, both instrumental and vocal, the other two being given by the Society assisted by visiting artists.

THE CHORAL SOCIETY

All students of the University who can sing are admitted to the choral society upon payment of fifty cents, the membership fee. For those who are not students the fee is $1.00. These dues admit the members to all concerts of the choral society series.

GENERAL ANNOUNCEMENTS

Students may enter the School of Music at any time, but it is greatly to their interest to enter, as far as possible, at the beginning of the semester.

Students entering within the first two weeks of a semester will be charged for full semester; after that time, for the remainder of the semester and one week additional.

There is no deduction made for lessons missed by students except in case of prolonged illness, when the loss is divided equally between the student and the school.

Students of the School of Music are not allowed to take part in public programs or in musical organizations without the consent of their respective teachers and the director of the school.

All music students are expected to attend the regular students' recitals, and to take part in them whenever so assigned, and to attend all concerts given under auspices of the University. They are expected to identify themselves with the various organizations of the school, and are required to enter any to which they are assigned by the director.

It is expected that all students will take sufficient work—literary or musical or both—to occupy their entire time.

CREDIT FOR MUSIC ON COLLEGE COURSES

Credit towards the degree of Bachelor of Arts will be given for courses in the theory and the history of music, not to exceed fifteen semester hours.

COURSES OF STUDY

The School of Music offers instruction in the following subjects: Voice, piano, violin, organ, accompanying, chamber music, orchestra, band music, sight-reading, public school music, harmony, counterpoint and history of music. In voice, piano and violin two courses are offered, one of three years, leading to a teacher's certificate, and one of four years, leading to an artist's certificate.

REQUIREMENTS FOR ADMISSION

No student can be classified in the collegiate courses in music without passing an examination in solfeggio, or demonstrating to the satisfaction of the head of the department the ability to read music of moderate difficulty, and giving evidence of the mastery of the elements of music.

In the preparatory courses, to which children only are admitted, no previous knowledge of music is required.

REQUIREMENTS FOR GRADUATION

GENERAL REQUIREMENTS

Candidates for a Teacher's certificate in any of the three courses mentioned above must have satisfactorily completed two years of High School English, one year of History and one year of a foreign language. They must also have completed courses 1, 2, 3, and 4 in theory of music and courses 5 and 6 in history of music and must have satisfied certain requirements in ensemble.

Candidates for an artist's diploma must meet all the requirements imposed for the teacher's certificate and appear satisfactorily in a graduating recital.

VOICE

Candidates for the teacher's certificate in voice, in addition to the above general requirements, must have satisfactorily completed the three-year course in voice as outlined below, and must possess the ability to perform acceptably selections from the standard oratories and operas. They must also have completed one year of work in each of the modern languages—French, German, and Italian, and two years of piano.

Candidates for the artist's diploma in voice must satisfy all the general requirements and the requirements for the teacher's certificate, and must have completed the fourth year's work in voice.

PIANO

Candidates for the teacher's certificate in piano, in addition to the general requirements, must have satisfactorily completed the three-year course outlined below, including compositions covering the classical and romantic periods, and also the lighter works of some modern composers. They must also have satisfactorily completed the course in ensemble playing.

Candidates for the artist's diploma in piano, in addition to the general requirements and the work required for a teacher's certificate, must have completed the four-year course in piano and the course in counterpoint. Particular emphasis is placed upon the graduation recital for students in the piano course.

VIOLIN

Candidates for the teacher's certificate in violin, in addition to the general requirements, must have satisfactorily completed the three year course in violin music as outlined below, including the concertos of Viotti, Rode, and Kreutzer, and the lighter works of some modern composer. They must also have some knowledge of piano playing.

Candidates for the artist's diploma, in addition to the general requirements and the work required for the teacher's certificate must complete the four years' work in violin music and give a graduating recital program including one sonata or concerto, one trio or quartet and solos.

Note:—Students desiring to become candidates for certificates or diplomas should note that while the above mentioned courses are referred to as three year and four year courses no definite period of time can be assigned for their completion. In all cases certificates and diplomas are awarded on the basis of the proficiency acquired, rather than the length of time devoted to the course.

DEPARTMENTS OF INSTRUCTION

Strict adherence to a fixed list of studies is not required. The needs of the individual student are considered and the studies varied accordingly. New works are carefully examined by the musical directors and those of value are adopted. An idea of the work covered in the different classes may be obtained from the following.

VOICE

MR. BLACK

The following is a general outline of work for a student taking only technical work—that is, vocal lessons alone.

First Grade—Technique; scales, arpeggios, etc.; vocalises, Panofka and Concone, Vaccai and Marchesi in Italian. Simple songs in Italian and English.

Second Grade—Technique; scales, Lutgen, Concone, Lamperti, Panofka, etc., Vannuccini in Italian; songs in Italian and English. Ensemble; duets, trios and quartets.

Third Grade—Technique; Bona, Lutgen, Concone, Bordogni, etc., Arias from standard grand operas and oratories. Ensemble.

Fourth Grade—Technique; Bona, Lamperti, Concone, Aprile, etc., advanced. Oratorio roles, scenes from operas, various songs and arias in preparation for individual recitals. Ensemble.

PUBLIC SCHOOL MUSIC

Sight-Reading

This class meets once each week. In it is offered some preliminary work in harmony and notation in their particular relation to singing. The "movable do" is used; A modern and easily comprehended text-book is employed.

This work is required of vocal students. No fee is asked of them but to students from other departments a charge of $10.00 a semester is made. This course is recommended as a preliminary to beginners in voice.

PIANO

MR. WERTIME, MRS. SNEE, MISS MOORE, MISS HAYES, and MISS TREAT

The course in this department is intended to meet the varying needs of the individual pupils, with the idea of furnishing a comprehensive, rather than a rigid, inelastic, training in piano-forte technique. While the acquirement of finger dexterity is necessary,

the value and importance of the mental training to be obtained from the study of music is emphasized, and the course is expected to make apparent the advantage of a broad musical education.

The course required of candidates for teacher's certificates or artist's diplomas comprises compositions from the following masters: Bach, Haendel, Haydn, Mozart, Beethoven, Schubert, Weber, Mendelssohn, Schumann, Chopin, Henselt, Liszt, Rubenstein, Brahms, Greig, Saint-Saens, Moszkowski.

Preparatory Piano Course

The School of Music offers a well organized preparatory course, presided over by Miss Susan M. Moore. The beginners' class has two sessions a week, one on Saturday morning, and one on Wednesday afternoon, after school hours. Pupils generally remain in this course for two years, at the end of which time it becomes necessary to give them more individual attention. Children in this department are taught sight-reading, transposition, and ensemble playing. They are required to do black-board exercises, and to have a thorough course in ear training.

VIOLIN

Miss HORNE

The mastery of the violin, requiring, as it does, years of specialized effort, tends to restrict students in their musical studies. This course aims to give a thorough training in all the essentials of violin playing, and at the same time to pave the way to a broader, more general culture, which is a part of the true musician's education.

The course required of candidates for the teachers's certificate comprises the Sevcik Violin School; elementary studies and exercises by Wohlfahrt, Dancla, Hermann, Kayser; etudes by Mazas, Kreutzer, Florillo, Rode; selections from De Beriot, Wieniawski, Viotti, Rode, etc.

The course required of candidates for the artist's diploma comprises, in addition to the above, Bach sonatas, concertos by Mendelssohn, Molique, Spohr, Kreutzer, Bruch, and chamber music, etc.

Preparatory Violin Course

A course in violin instruction is offered for children, corresponding to the courses of a similar nature in the piano department. Children who have had no training in music are admitted to this class.

PIPE ORGAN

Mrs. SNEE

The organ course is intended to provide a thorough and com-

plete education in the work of a church organist and accompanist. Students are required to take some studies on the piano before entering the organ school.

WOOD AND BRASS INSTRUMENTS

Mr. MESTREZAT

Opportunity is offered in this course to obtain the instruction necessary to fit one to play the various wood-wind and brass instruments used in orchestras and bands.

ENSEMBLE

Miss HORNE

1. **Lessons in Accompanying.** This course is intended to furnish opportunity to advanced students to acquire the art of accompanying songs, violin and cello solos.

2. **Chamber Music.** The study of sonatas, trios and quartettes by Bach, Beethoven, Mozart, Haydn, Mendelssohn, Gade, etc. Open to violinists, 'cellists, pianists and viola players. A preparatory class is also offered, the works to be studied including trios by Reinecke, Bohm, Haydn, and Hellmsberger.

3. **Orchestra Music.** A study of the usual orchestral works and of accompaniments of pianoforte and violin concertos.

CHORUS SINGING

Mr. BLACK

The choral society meets for rehearsal once each week, and affords opportunity to obtain the pleasure and benefit of chorus singing as well as to acquire familiarity with the field of choral work.

THEORY OF MUSIC

Miss HAYES

1. Harmony. One semester.
2. Harmony. One semester.
3. Counterpoint. One semester.
4. Analysis. One semester.
5. History of Music. One semester.
6. History of Music. One semester.

Note:—Each of these classes recites five times weekly. See page 107.

TUITION PER SEMESTER

The following table shows the rates of tuition for private lessons of thirty minutes in length:

	One	Two	Three per wk.
Voice			
Louis Black	$25.00	$40.00	$55.00
Piano			
Rudolf Wertime	25.00	40.00	55.00
Grace Martin Snee	18.00	28.00	38.00
Susan Maxwell Moore	18.00	28.00	38.00
Flora Ray Hayes	18.00	28.00	38.00
Helen Loveland Treat	10.00	17.00	
Violin			
Margaret Horne	18.00	28.00	38.00
Pipe Organ			
Grace Martin Snee	25.00	40.00	55.00
Wood and Brass Instruments			
Walter Mestrezat	14.00	20.00	

Ensemble		
Accompanying lessons	$12.00 per sem.	
Chamber Music	6.00 " "	$10.00 per yr.
Orchestral class	3.00 " "	5.00 " "

Theory	
Class daily, recitation one hour	
Harmony, Analysis or Counterpoint	$20.00 per sem.
Musical History	16.00 " "
Tuition in other classes is as follows:	
Preparatory piano	12.00 " "
Preparatory violin	12.00 " "
Public School Music sight reading	10.00 " "

Piano for practice, one hour per day, will be furnished at $6.00 per semester; two hours per day at $10.00 per semester; three hours per day at $14.00 per semester; four hours per day at $18.00 per semester. Clavier practice, one hour per day, at $5.00 per semester.

Pipe organ practice, 1 hour per day $10.00 per semester.

Students whose work is wholly in the School of Music pay only tuition.

Students of the School of Music who take University work are subject to the usual fees except in the cases of French, German and Italian as required.

THE SCHOOL OF FNIE ARTS

EQUIPMENT

The University provides large, well lighted studios, containing drawing stands, easels, etc., and a large collection of casts, and models. Students have access to the University library, which contains a large and carefully selected collection of works on the history and development of the fine arts.

FEES

The regular classes in drawing and the history of art are open without charge to all students of the University, but in the special drawing and painting classes fees are charged, as follows:

For one semester:

Special drawing $10.00
Painting, all mediums 15.00

Students whose work is entirely in this school, and who take private work only, are not required to pay the usual University fees, but are entitled to all the privileges of the other University students —library, lectures, etc. Fees are payable in advance to the bursar of the University.

THE REGULAR ART COURSE

This course of four years is so planned that the student may acquire the technique of drawing and painting, a general art education, and a degree of aesthetic culture tending to develop the individual powers of expression.

The work of the first year includes light and shade drawing from the antique, study of perspective, sketching from nature, drawings of still life, and study of form carried out in clay modeling. Color studies are introduced in the spring term.

In the second year the drawing is continued from cast in char-

coal and crayon, copying the head, mask, and ornament from the antique. Color studies in water-colors and oil are given with the work in black and white.

During the third and fourth years, the student copies the bust and full length figure from the antique, paints from the draped model in the life class, and studies portrait painting and composition or sketching from nature, and landscape painting.

REQUIREMENTS FOR DIPLOMA

To those who complete this course of four years' study, making oil painting their major study and including the history of art, a diploma will be given.

ART COURSE FOR TEACHERS

This course is designed for teachers in public or normal schools. It comprises free-hand drawing of ornament, mask, and head from the antique; study of still life, perspective and mechanical drawing; sketching; study of design; study of color and form developed in water-color painting and clay modeling.

Class lectures are given on the teaching of form and color, and the history of art.

Students should spend two years in pursuing this course; but to suit individual needs, the course may be shortened, and what is most essential will be given in the time available.

CREDIT FOR BACHELOR OF ARTS DEGREE

Credit toward the Degree of Bachelor of Arts will be given for work in Fine Arts not to exceed fifteen hours.

COURSES OF INSTRUCTION

Associate Professor Leonard

1. **Elementary Drawing.** (5 Hrs.) The historic forms of art and their development. Lectures, with collateral reading and practice in drawing.

First semester; 9:00; L.

2. **Elementary Drawing.** (5 Hrs.) A continuation of course 1.

Second semester: 9:00; L.

16. Elementary Drawing. (2 Hrs.) For students in the College of Agriculture only.

First semester: Tu. Th., 8:00 to 11:00; L.

4. Advanced Drawing. (5 Hrs.) Historic periods of architecture, sculpture, and painting. Lectures, with collateral reading and practice in drawing.

First semester: 10:00; L.

5. Advanced Drawing. (5 Hrs.) A continuation of course 4.

Second semester: 10:00; L.

7. The History of Greek Art. (3 Hrs.) With a consideration of the arts of Egypt, Assyria, and Rome, in their relation to Greek art.

First semester: M. W. F., 8:00; L.

8. The History of Mediaeval and Modern Art. (3 Hrs.) With special consideration of the Renaissance period.

Second semester: M. W. F., 8:00; L.

17. Public School Drawing. (5 Hrs.)

Second semester: 11:00; L.

Mrs. HUBBARD

9. Perspective Drawing. (5 Hrs.) Elementary study of linear perspective; principles applied to geometrical forms and familiar objects. Application to landscape drawing. Development and construction of the arch. Minifie's and Spanton's Perspective.

First semester: Hours to be arranged; L.

10. Advanced Perspective Drawing. (5 Hrs.) A continuation of course 9. Isometric drawing; sciography; perspective applied to buildings, use of plan and perspective erection. Reference books, Spanton and Ware.

Second semester: Hours to be arranged; L.

12. Oil Painting. Color analysis and combinations; painting from still life, fruits, flowers and draperies; landscape painting; study of the draped model. Hours to be arranged; L.

13. Pastel Painting. The various studies of color and design suitable for expression in this medium; special study for pastel portraits and the draped figure. Hours to be arranged; L.

14. Water Color Painting. Study from still life, landscape and model; design from plant life and conventional forms.
Hours to be arranged; L.

15. Keramic Design. Study of colors and combinations; application of ornament and firing; china fired in the studio kiln.
Hours to be arranged; L.

18. Design and Composition. Study of historic ornament and principles of design. Lectures, collateral reading, and practical work in all mediums. Hours to be arranged; L.

THE SCHOOL OF AGRICULTURE AND HOME ECONOMICS

ORGANIZATION AND PURPOSE

The School of Agriculture and Home Economics was created by order of the Board of Regents on October 26, 1910, and will offer its second year of regular work beginning September 18, 1912. The school is located at Morgantown, and its work is to be carried on in connection with the College of Agriculture in the University, and under the direction of the Dean of that college.

The school has not been established, however, for the purpose of preparing students for entrance to the University or of competing with the high schools of the state. Its aim is to provide a practical training for the young men and women of West Virginia, who desire particularly to prepare themselves for more successful and useful life on the farm or in the home, and who may not be able to secure such training at their home schools.

FACULTY

The instruction in the School of Agriculture and Domestic Science will be given for the most part by the regular faculty of the College of Agriculture with some assistance from other departments of the University.

EQUIPMENT

The laboratories and apparatus of the scientific departments of the University, and the libraries of the Agricultural Experiment Station and University are at the command of the students in the School of Agriculture. The farm of the Agricultural Experiment Station, together with its gardens, experiment plats, laboratories, and collections are available for students desiring to acquaint themselves with

the practical and scientific methods of conducting agricultural operations.

ADMISSION

Students who are sixteen years of age, or over, and who have completed satisfactorily the eighth grade, will be admitted without examination. Such students should have an application blank properly filled out and signed by their teacher and sent in before registration day.

Students who have not completed the eighth grade will be expected to take an examination in arithmetic, United States history, English grammar, geography, reading, writing, and spelling. These examinations will be held September 17, 1912.

Applicants whose home schools do not afford adequate instruction in the common branches, or who may not have been able to complete the eighth grade, may with the permission of the Dean, be admitted with not more than two conditions, which must be removed according to instructions given the student upon admission.

Maturity of years and experience will be given due consideration, but in no instance should the student consider these sufficient to admit him. Wherever there is a question concerning the student's qualifications to enter he should confer with the Dean before coming to the University.

Upon arrival at Morgantown students should report to the office of the Dean of the College of Agriculture, where they may register, and assistance will be furnished in securing suitable rooms and board.

THE SCHOOL YEAR

The school year consists of two quarters of twelve weeks each, commencing September 18, 1912, and closing March 21, 1913. The year is thus arranged so that young men may return to the farm in time for the spring work. A third quarter is required in the spring of the senior year.

Instruction begins promptly at the opening of each quarter and students should be present on registration day and remain until the close of the term. Students will not be received for the work of the first quarter after October 1, except by special permission.

Special classes are arranged for students who are able to attend only the winter term.

FEES AND EXPENSES

Tuition and Fees

Tuition is free to West Virginia students. For students from other states the tuition is $10.00 per term.

A matriculation fee of $5.00 is payable upon entering the school by all students except those holding appointments as cadets.

The contingent fee is $2.00 per term and is payable by all students except those holding appointments as cadets.

All students are required to pay a regular athletic fee of $2.00 per term which entitles them to the use of the gymnasium.

Fees for materials used are charged in some courses involving laboratory work, as stated under those courses.

MILITARY DRILL

All male students will be required to take military drill and military science during the first three years. The announcements of the military requirements will be found on page 248 of the University catalogue for 1911-12.

Women students will be required to take gymnasium work, in place of drill.

ATHLETICS

Students in the School of Agriculture will not be eligible to the University Athletic teams, but they will be encouraged to organize teams of their own to compete with schools of a similar grade.

REQUIREMENTS FOR GRADUATION

1. The completion of the prescribed course.

2. An essay of not less than one thousand words upon a topic connected with agriculture or home economics, typewritten on paper of approved size for binding and filed in the library.

3. For young men, a practical experience in field work on a farm, as shall appear from reports made from responsible sources, of such a nature in such a form as may be prescribed by the faculty.

A student meeting these requirements for graduation will be given a diploma, certifying that he is a graduate of the School of Agriculture.

Although the School of Agriculture is not planned as a preparatory school, its curriculum has been purposely arranged so that it

may fit those students who desire to secure a higher education, to enter the College of Agriculture. Graduates of the School of Agriculture will be given credit for twelve entrance units for admission to the College of Agriculture, and may be admitted as special students with two entrance conditions. Work done in the School of Agriculture can not be counted as entrance credit in any college in the University except the College of Agriculture.

Many students will probably be able to attend but a year or two. Such students will find the work in agriculture arranged so that they may secure a maximum amount of work in the department in which they are most interested, in the time at their command.

FOUR YEAR CURRICULUM IN AGRICULTURE

Note:—Numbers immediately following the subject represent the number of recitation hours per week; numbers in parenthesis give the hours spent in laboratory work.

First Year

Fall	*Winter*
English A, 5	English B, 5
Botany A, 3 (5)	Botany B, 3 (5)
Freehand drawing A, (5)	Mechanical drawing B, (5)
Agronomy A, 3 (2½) Farm crops	Horticulture A, 2 (2½) Plant propagation
Animal husbandry A, 3 (3) Breeds of livestock	Dairying A, 2 (7½)
Military science	Military science

Second Year

Fall	*Winter*
English C, 2	English D, 2
Mathematics A, 5 Arithmetic and algebra	Mathematics B, 5 Algebra
Chemistry A, 3 (5)	Chemistry B, 3 (5)
Agronomy B, 3 (2½) Soils	Wood shop (5)
Agronomy C, (4½) Farm machinery	Animal husbandry B, 3 (2½) Principles of breeding
Forge Shop (5)	Farm management A, 2 Farm bookkeeping
Military Science	Military Science

Third Year

Fall	*Winter*
English E, 3	English F, 3
Mathematics C, 5	Mathematics D, 5
Geometry	Geometry
History A, 2	History B, 2
English history	English history
German A, 5	German B, 5
Entomology A, 3 (5)	Entomology B, 2 (2½)
	Farm management 3

Fourth Year

Fall	*Winter*	*Spring*
English G, 4	English H, 4	English 1, 4
History C, 4	History D, 4	
American history	Civics	
German C, 5	German D, 5	German E, 5
Elective agriculture, 4	Elective agriculture, 4	Elective agriculture, 8
Elective, 3	Elective, 3	Elective, 3

THE SHORT COURSE

The Short Course is arranged for young men who desire to study agriculture during the winter months. The course occupies the winter term (Jan. 7 to March 21, 1913) for two years. The first year is designed to give the student a general knowledge of modern agricultural science. During the second year the student may specialize in horticulture, dairying or animal husbandry. Upon completing the two quarters a Short Course Certificate will be given, signed by the Dean of the College of Agriculture.

The entrance requirements, fees, etc., are the same as for all students of the School of Agriculture. (See page 211.)

SHORT COURSE CURRICULA

First Year in General Agriculture

For all Short Course Students

Horticulture A, Plant Propagation.
Agronomy A, Farm Crops.
Agronomy B, Soils.
Animal Husbandry A, Breeds of Livestock.
Agricultural Chemistry.
Agronomy C, Farm Machinery.

Second Year in Dairying

Dairying A, Farm Dairying.
Dairying B, Dairy Farming.
Dairying C, Dairy Cattle.
Animal Husbandry B, Feeds and Feeding.
Farm Management A, Farm Bookkeeping.
Veterinary Science B.

Second Year in Horticulture

Horticulture B, Small Fruits.
Horticulture C, Orchard Fruits.
Entomology C, Economic Entomology.
Botany B, Elementary Agricultural Botany.
Farm Management A, Farm Bookkeeping.

Second Year in Animal Husbandry

Animal Husbandry B, Feeds and Feeding, 11:30.
Animal Husbandry E, Principles of Breeding.
Animal Husbandry F, Stock Judging.
Animal Husbandry C, Beef Cattle.
Farm Management A, Farm Bookeeping.
Veterinary Science A.
Farm Buildings.

THE FARMERS' COURSE

The Farmers' Course consists of popular lectures, demonstrations, and exercises planned for the benefit of various classes of farmers. The faculty are assisted by men who have been unusually successful, and who are known as experts in the particular line in which they give instruction. The detailed work given is changed from year to year, but the general character of the course remains the same. The course is open to faremrs over 21 years of age. Forty farmers registered in 1912 and the work is becoming increasingly popular each year.

The course for 1913 will be held from, Tuesday, January 7 to Friday, January 17. Detailed announcements may be obtained upon application to the Dean of the College of Agriculture.

COURSE IN HOME ECONOMICS

RACHEL H. COLWELL, in charge

The course is planned to fit women for the life of the home and the farm. Such training in the arts and sciences is given as will help to make women more efficient home makers. The work involved takes up the subject of cooking, planning of menus to suit the needs of the family, feeding in case of sickness, how to utilize the materials at hand with the least expenditure of time and strength for the best returns.

The course in sewing trains the student to make the best selection of material for the purpose intended, the making of simple clothing and the repairs necessary. Students discuss the arrangement of kitchens, their relation to adjoining rooms, determine how they may be modified, if necessary, to make them more convenient with the least expenditure of money, and the general furnishing of the house.

The keeping of household accounts is studied with special reference to teaching the students how to buy intelligently, and how to apportion the amount available to the different needs of the family and the home.

Students may elect work in dairying, farm crops, and plant propagation. Opportunity is offered in the course for a certain amount of music.

EQUIPMENT

The classes in cooking and sewing have the privilege of using the home economics laboratories of the University. The laboratory for cooking is a light, airy room fitted with charts and specimens showing the manufacture of the different food products and the illustrative material. The desks are fitted with individual equipment: small stoves and portable ovens. There is also a range with hood, heat indicator, side oven and boiler.

FEES

A fee of $1.50 per term is charged for the course in cooking. Students will bring their own material for the work in sewing.

CURRICULUM IN HOME ECONOMICS

First Year

Fall	*Winter*
English A, 5	English B, 5
Botany A, 3 (7)	Botany B, 3 (5)
Cooking A, 1 (10)	Cooking B, 3 (4)
Sewing A, (6)	Sewing B, (6)
Music A, (4)	Music B, (4)
Gymnasium	Gymnasium

Second Year

English C, 2	English D, 2
Mathematics A, Arithmetic and algebra, 5	Mathematics B, algebra, 5
Chemistry A, 3 (5)	Chemistry B, 3 (5)
Cooking C, 2 (7½)	Hygiene B, 5
Hygiene A, 3	Sewing C, (7½)
Gymnasium	Gymnasium

Third Year

English E, 3	English F, 3
Mathematics C, Geometry, 5	Mathematics D, Geometry 5
History A, English history, 2	History B, English history 2
German A, 5	German B, 5
or Agronomy A, 3 (5)	or Dairy A, 2 (7)
Home management 3 (5)	Home management 3 (5)

Note:—Numbers after courses give number of recitations per week and numbers in parenthesis give hours of laboratory work.

For detailed description of Courses of Instruction see University Bulletin, February 1912.

For detailed information concerning the work in Domestic Science, address Miss Rachel H. Colwell, Morgantown, W. Va.

Concerning the work in Agriculture, address Dean E. D. Sanderson, Morgantown, W. Va.

THE SUMMER SCHOOL

FOURTEENTH SESSION, JUNE 24 TO AUGUST 23, 1912

THE FACULTY.

THOMAS EDWARD HODGES, LL.D., *President of the University.*

WAITMAN BARBE, A.M., LITT. D., *Director of the Summer School.*

CHARLES DEGARMO, PH. D., (Head of the College of Education, Cornell University) *Education.*

WILLIAM C. RUEDIGER, PH. D. (Professor of Educational Psychology, Teachers' College, the George Washington University) *Education.*

MORRIS P. SHAWKEY, A.M.. (State Superintendent West Virginia) *School Administration.*

SARAH E. GRISWOLD, (Critic teacher in the Chicago Normal School) *Observation Classes in Grammar Grades; Principles and Methods of Elementary Teaching.*

LILLIAN FLIEGE, (Graduate Pratt Institute and Supervisor of Drawing in the Davenport, Iowa, Public Schools) Public School Drawing; Handwork; *Clay Modeling.*

ELEANOR WRIGHT, (Columbia University) *Observation Classes in Primary Grades.*

LUCY MARIAN DOYLE, (Critic Teacher in the Parker Practice School, Chicago) *Observation Classes in Grammar Grades.*

JASPER NEWTON DEAHL, A.M., PH.D., (Professor of Education in the University) *Education.*

FREDERICK LAWRENCE KORTRIGHT, D.Sc., (Professor of Chemistry in the University) *Chemistry.*

ALBERT MOORE REESE, PH.D., (Professor of Zoology in the University) *Zoology.*

EUGENE C. CRITTENDEN, M.SC., (United States Bureau of Standards *Physics.*

OLIVER PERRY CHITWOOD, PH.D., (Professor of European History in the University) *History.*

ROBERT ALLEN ARMSTRONG, A.M., (Professor of English Language and Literature in the University) *English Literature.*

DAVID DALE JOHNSON, A.M., (Assistant Professor of English in the University) *Composition and Rhetoric.*

MADISON STATHERS, PH.D., Professor of Romance Languages in the University) *French and Spanish.*

JAMES E. HODGSON, PH.D., (Baltimore Polytechnic Institute) *Mathematics.*

ALFRED JARRETT HARE, A.M., Professor of Latin in the University) *Latin.*

L. D. ARNETT, B.SC., PH. D., (Librarian of the University) *Library Science.*

ALONZO BEECHER BROOKS, A.B., (State Forester of West Virginia) Nature Study; *Botany.*

LUTHER FRANCIS SUTTON, B.SC., B.SC.AGR., (Instructor in Horticulture in the University) *Plant Propagation.*

LEONARD MARION PEAIRS, M.SC. (Associate Professor of Entomology in the University) *Entomology.*

JOHN BEHNY GRUMBEIN, B.SC.M.E., (Assistant Professor of Mechanical Engineering and Foreman of the Wood Shop) *Mechanical Training.*

E. DWIGHT SANDERSON, B.SC., B.AGR., (Dean of the College of Agriculture) *Elementary Agriculture.*

EARL WOODDELL SHEETS, B.SC.AGR., (Assistant in Agricultural Extension) *Secondary Agriculture.*

LLOYD LOWNDES FRIEND, A.M., (Professor of Secondary Education in the University) *Education.*

L. J. HANIFAN, A.M., (State Supervisor of Rural Schools) *Administration of Rural Schools.*

RACHEL HARTSHORN COLWELL, B.Sc., A.M., (Assistant Professor of Home Economics in the University) *Home Economics.*

ANTHONY WENCEL CHEZ, A.B., (Director of Physical Training in the University) *Gymnasium for Men.*

LOUISE FERRIS CHEZ, (Assistant Director of Physical Training in the University) *Gymnasium for Women; Director of Children's Plays.*

FRANK VANDERSLICE SANDER, B.Sc., *Chemistry.*

LOUIS BLACK, (Director of the University School of Music and Instructor in Voice) *Voice.*

MARGARET WINTON HORNE, (Instructor in Violin in the University School of Music) *Violin.*

GRACE MARTIN SNEE, (Instructor in Organ and Piano in the University School of Music) *Organ; Piano.*

FLORA RAY HAYES, (Instructor in Piano and Theory of Music in the University School of Music) *Theory of Music.*

ETHEL BOREDEN BLACK, *Advanced Piano.*

FACULTY OF THE SCHOOL OF METHODS FOR SUNDAY SCHOOL WORKERS

THOMAS EDWARD HODGES, LL.D., *President of the University.*

DANIEL BOARDMAN PURINTON, L.L.D., *Dean.*

MARION LAWRENCE, *General Secretary International Sunday School Association.*

MRS. PHOEBE A. CURTISS, *Elementary Superintendent for the State of Ohio.*

LILLIAN FLIEGE, *Supervisor of Drawing in the Public Schools of Davenport, Iowa.*

ELEANOR WRIGHT, *Columbia University.*

ARTHUR T. ARNOLD, *General Secretary West Virginia Sunday School Association.*

MRS. ARTHUR T. ARNOLD.

MARTHA V. GRAHAM, *Field Worker, West Virginia Sunday School Association.*

ROBERT ALLEN ARMSTRONG, L.H.D., *Chaplain and Professor of English Literature in the University.*

JASPER NEWTON DEAHL, PH.D., *Professor of Education in the University.*

ANNOUNCEMENTS.

The fourteenth annual session of the Summer School of West Virginia University will begin Monday, June 24, 1912, and continue until Friday, August 23, a period of nine weeks. The length of the Summer School has heretofore been six weeks but the demand for a greater opportunity to do credit work has induced the management to arrange for the extension of many of the credit courses through a term of nine weeks. Credit may be had for the full nine weeks' work or for the first six weeks only, as the student may prefer. Examinations will be held at the close of the first six weeks for those who do not desire to remain for the full nine weeks. Such departments as those of Public School Drawing, the Model or Observation School and others not offering credit will close August 2, at the end of the first six weeks.

ADMISSION

There are no requirements for admission to the Summer School unless the Student desires University credit for the work to be done. In such case he must satisfy his instructors that he is prepared to take the courses selected. If he desires regular classification he must meet

the regular University conditions, a statement of which may be found in the University catalogue.

CREDIT

Entrance or college credit may be had for most of the Summer School work. The amount of credit in terms of semester hours is stated in the announcement of each course. Students may register for credit for not more than six hours for six weeks and for not more than nine hours for nine weeks. All students who complete the work in the courses for which they register and take the examinations will receive a report from the Registrar showing their grades but no University record will be made of the grades of any student who has not matriculated in the University and paid the matriculation fee as indicated below.

THE FEES

The entire fee for everything offered in the Summer School (excepting music), is $5.00, whether the student be a resident of West Virginia or of some other State, provided that University credit for summer work is not desired. If University credit for the work is desired, a matriculation fee of $5.00 must be paid, unless the student is already a matriculate of the University.

Students from States other than West Virginia who desire to obtain University credit for the summer work will pay also a tuition fee of $6.00.

If, however, no University credit is desired, the total fee for students from other States, as well as from West Virginia, will be only $5.00.

REGISTRATION

Students will register on Monday, June 24, with the Registrar, in the south wing of Woodburn Hall. All students, whether previously in attendance at the University or not, must register before entering the Summer School.

Work will begin promptly in all departments on Tuesday, June 25.

LIBRARY AND LABORATORIES

The library is open from 8:00 A. M. to 10:00 P. M. every day except Sunday, and on Sunday it is open for reading and the consulta-

tion of books from 2:00 P. M. to 5:00 P. M. No books are given out on Sunday.

It is the effort of those in charge to render every possible service to aid students in making profitable use of the books.

The reading room is well supplied with the current periodicals and newspapers—both technical and general—which are free of access to all who wish to make use of them.

The laboratories in chemistry, physics, zoology, home economics, manual training, entomology, agriculture, bacteriology, and botany will be in use during the Summer School.

LIVING ACCOMMODATIONS

Men's Hall

The Men's Hall furnishes room and board and full accommodations at the exceptionally low price of $3.25 a week. Men take care of their own rooms, but the matron inspects them. Table board at the Dormitory for students living in rooms outside is $2.50 a week. Rooms may be engaged by writing to the matron, Mrs. F. M. Harris, Morgantown.

Women's Hall

Commodious and attractive rooms with good board may be had at Women's Hall. The Dean of Women resides in the Hall and has personal oversight. Living expenses are moderate. Write to Miss Susan Maxwell Moore, Dean of Women, Morgantown, to ascertain prices and to engage rooms.

Chapter Houses

Two of the University Chapter Houses will be available for young women students. Information may be had from the Dean of Women.

Other Places

For Women.—The Dean of Women has a list of desirable places in Morgantown sufficient to accommodate a large number of young women with both rooms and board at reasonable rates.

All women students are requested to make Women's Hall, 247 Willey street, headquarters upon their arrival. Miss Moore and her assistants will see that they are provided with living accommodations.

For Men.—Mr. C. E. Hilborn, Secretary of the Y. M. C. A. has charge of the living arrangements for men; he will give information and provide accommodations.

The two Christian Associations of the University assist in the work of helping students to find suitable accommodations. Committees of these associations will meet students at the railway station or the wharf and conduct them to their rooms.

SUMMER SCHOOL CONVOCATION

The convocation exercises of the Summer School will be held Tuesday evening, June 25, at 8:30 o'clock, in Commencement Hall. The Convocation address will be delivered by Dr. Charles DeGarmo, of Cornell University. Music will be furnished by the School of Music.

FREE MUSIC RECITALS AND MATIN SERVICE

Weekly lecture recitals, under the direction of the School of Music, will be given. Great composers will be briefly discussed and their works interpreted with voice, piano or organ by Professor Black, Miss Horne, and others. These recitals are free to students and the public.

A brief chapel service will precede these music recitals. They will be held every Wednesday at 11 o'clock in Commencement Hall. During that hour no other exercises will be held in any department of the Summer School.

SUNDAY SCHOOL METHODS WEEK

The annual School of Methods for Sunday School Workers will be held during the week beginning Monday, July 1. Special effort will be made this summer to increase the interest in this phase of work—and to make the work of greater importance. A pamphlet giving full information about Sunday School week will be issued in due time. It may be had by writing to Mr. Arthur T. Arnold, of Wheeling, General Secretary of the State Sunday School Association, or to President Hodges of the University, who is also President of the State Sunday School Association.

COUNTRY LIFE CONFERENCE

During the week beginning Monday, July 15, will be held a Country Life Conference, to be participated in by a number of experts in the widespread movement for better rural conditions. The country school, the country church, the country home, the country library, country

social life and country roads will be some of the subjects discussed. State Superintendent Shawkey announces his intention of calling a meeting of all the county and district superintendents during that week. These superintendents will of course take an active part in the Country Life Conference. This will be the first time that the University has undertaken such a conference and it expects to make it of great interest and importance. Further information will be furnished upon application. Members of women's clubs, workers in civic organizations, pastors of rural churches, and workers in rural schools are especially invited to attend this conference.

A special program for Country Conference Week will be pubished about June 1.

EDUCATIONAL CONFERENCE

The ninth annual two-days Educational Conference under the auspices of the University Summer School will be held Friday and Saturday, July 19 and 20. The general topic for discussion will be "The Public School and Public Health."

This important topic will be discussed from various points of view. Many of the leading educators of the State as well as some prominent physicians will participate.

SPECIAL LECTURES

A considerable number of special lectures, some of them illustrated, will be given during the Summer School. Some of these lectures will be by members of the University Faculty and some of them will be by prominent speakers from elsewhere.

THE GYMNASIUM

For the first time the University will open the Gymnasium to Summer School students. Arrangements will be made for women as well as for men.

For information concerning any department of the Summer School, write to the Director,

WAITMAN BARBE, Morgantown, W. Va.

SCHEDULE OF COURSES BY HOURS

8 A. M.

Types of American fiction	R. A. Armstrong	31 W.
The short story	R. A. Armstrong	31 W.
Europe in the 19th century	O. P. Chitwood	29 W.
Analytic geometry	J. E. Hodgson	16 W.
Home economics 1	R. H. Colwell	2 W.
Elementary Latin	A. J. Hare	12 W.
Elementary French	Madison Stathers	11 W.
Library science	L. D. Arnett	L.
Principles and methods of teaching	Miss Griswold	12 M.
High school administration	L. L. Friend	19 W.
Nature study	A. B. Brooks	M. H.
Elementary agriculture	E. D. Sanderson	7 M.
Secondary agriculture	E. W. Sheets	7 M.
Mechanical drawing	J. B. Grumbein	25 M. H.

9 A. M.

Studying, learning and teaching	J. N. Deahl	17 W.
Survey of English literature	R. A. Armstrong	31 W.
Grammar and correct usage	D. D. Johnson	21 W.
The Protestant Reformation	O. P. Chitwood	29 W.
Algebra	J. E. Hodgson	16 W.
Caesar	A. J. Hare	12 W.
French	Madison Stathers	11 W.
Principles of education	W. C. Ruediger	18 W.
Principles of manual training	J. B. Grumbein	16 M. H.
Nature study	A. B. Brooks	M. H.
Elementary agriculture	E. D. Sanderson	7 M.
Horticulture	L. F. Sutton	27 M.

10 A. M.

Shakespeare	R. A. Armstrong	31 W.
Teachers' course in English composition	D. D. Johnson	21 W.
College composition and rhetoric	D. D. Johnson	21 W.
Mediaeval history	O. P. Chitwood	29 W.
Chemistry—Qualitative analysis	F. L. Kortright	33 S.
Plane trigonometry	J. E. Hodgson	16 W.
Home economics A.	R. H. Colwell	2 W.
Latin 6 or 8	A. J. Hare	12 W.
French 7	Madison Stathers	11 W.
Public School drawing	Lillian Fliege	L.
Principles of teaching	W. C. Ruediger	18 W.
Elementary nature study	A. B. Brooks	M. H.
Economic entomology	L. M. Peairs	6 M.

11 A. M.

The country school	J. N. Deahl	19 W.
Preparatory English	D. D. Johnson	21 W.
History of Rome	O. P. Chitwood	29 W.
College physics	E. C. Crittenden	12 S.
General chemistry	F. L. Korkright	20 S.
Zoology 10	A. M. Reese	49 W.
Plane geometry	J. E. Hodgson	16 W.
Home economics B.	R. H. Colwell	2 W.
Latin 10 or 11	A. J. Hare	12 W.
French B—Teachers' review	Madison Stathers	11 W.
Matter and method in high schools	W. C. Ruediger	18 W.
Public school handwork	Lillian Fliege	14 W.
Systematic botany	A. B. Brooks	N. F.
General entomology	L. M. Peairs	6 M.

8:30 to 12

Observation classes	Sarah E. Griswold	11 M.
	Lucy M. Doyle	10 M.
	Eleanor Wright	14 M.

1 P. M.

Synthetic inorganic chemistry	F. L. Kortright	33 S.
Chemistry—Elementary quantitative analysis	F. L. Kortright	33 S.
Chemistry—Analysis of coal, coke, water	F. L. Kortright	32 S.
Chemistry—Quantitative analysis	F. L. Kortright	32 S.

1:30 P. M.

Experimental physics	E. C. Crittenden	11 S.
Physics—Laboratory methods	E. C. Crittenden	11 S.
Zoology 1	A. M. Reese	50 W.
Zoology 2	A. M. Reese	50 W.
Zoology 9	A. M. Reese	50 W.
Woodworking 1 and 2	J. B. Grumbein	21 M. H.
Tinsmithing	J. B. Grumbein	7 M. H.

2 P. M.

Administration and supervision of schools	J. N. Deahl	19 W.
Conference on primary methods and principles	Eleanor Wright	12 M.

3 P. M.

Public School drawing	Lillian Fliege	L.
Lectures on Education	Charles DeGarmo	

8:30 P. M.

Public lectures	C.

COURSES OF INSTRUCTION

The abbreviations are: M., Martin Hall; W., Woodburn Hall; S., Science Hall; L., Library; C., Commencement Hall; E., Experiment Station; N. F., North Fife; M. H., Mechanical Hall.

The numbered courses are taken from the regular University catalogue; the lettered courses are special Summer School courses.

EDUCATION

CHARLES DEGARMO

During the first week of the Summer School, beginning June 25, Dr. Charles DeGarmo, head of the School of Education in Cornell University, will give a course of lectures on **Education for Progress.** The subject will be considered from the following standpoints:

1. Prosperity and Education.
2. Health and Education.
3. Political Democracy.
4. Educational Democracy.
5. Eugenics.
6. Euthenics.
7. Adjustment of the Individual to Society.
8. Adjustment of Society to the Individual.

Daily, 3 and 8:30; C.

W. C. RUEDIGER

C. **Principles of Education.** (Credit: six weeks; 1½ Hrs.; nine weeks, 2½ hrs.) This course will undertake a systematic study of the bases, aims, values, content, and agencies of education as revealed by psychology, biology, and the social sciences. The pivotal point of the course will be the curriculum in its various phases, but this will be led up to by a thorough discussion of the aim of education and the elemental educational values; and it will be led down from by a consideration of the principles that underly the construction of courses of study. Special note will be taken of the theoretical background of vocational and avocational education. 9:00; 18 W.

D. **Principles and Technique of Teaching.** (Credit: six weeks, 1½ hrs.; nine weeks, 2½ hrs.) It is the purpose of this course to give teachers a mastery of those facts and principles that make the teaching process intelligent and effective. After an introductory discussion of the educative process as a whole, detailed consideration will be given to such topics as the following: Inductive and deductive lessons; the

type lesson; the presentation or appreciation lesson; the study lesson; the recitation, lesson assignment, reviews, and examinations; lesson plans; class management; moral, social, and esthetic culture. Special attention will be given to the effective use of the various lesson types in connection with text books and to ways and means of gaining realness in teaching. 10:00; 18 W.

E. **Matter and Method in High Schools.** (Credit: six weeks, 1½ Hrs.; nine weeks, 2½ Hrs.) This course will begin with a brief consideration of the functions of secondary education as revealed by educational theory and by a comparison of the American high school with German, French, and English secondary schools. But the major portion of the course will be devoted to the study of the educational values, essential content, and methods of teaching of the various high school branches. Mathematics, the physical sciences and industrial subjects, the biological sciences and agriculture, the earth sciences, history and social science, English, and the ancient and modern foreign languages will come in for discussion. In considering the methods of presentation, special attention will be given to making the work real and vital and to the development of initiative in the student.

Reference reading, reports, lectures, and discussions.

11:00; 18 W.

SARAH E. GRISWOLD

F. **Principles and Methods of Teaching.** (Credit: six weeks; 1½ Hrs.) The topics considered in this course will include attention and interest as related to the process of learning and of teaching; the basis for the choice and organization of subject matter used in teaching; the value of the various modes of expression to pupils and teacher and the influence of the social factor in teaching. The course will aim to emphasize the essential principles of teaching and help in the solution of practical school problems. The work will consist of discussions, assigned readings, reports of class exercises observed and the preparation of lesson plans and school programs. 8:00; 12 M.

JASPER NEWTON DEAHL

A. **Studying, Learning and Teaching.** (Credit: six weeks, 1½ Hrs.) Required reading, recitations, discussions, observations of pupils studying and teachers teaching, reports and practice work. This course will aim to present some principles that will secure economic studying and learning and effective teaching. The observation classes will be used to get the data and facts to be developed in the course.

9:00 a. m.; 17 W.

B. **The Country School—Its Organization, Inspection, and Supervision.** (Credit: six weeks, 1½ Hrs.) This course will make a study of rural conditions and problems, place and opportunity of the school in meeting situations and solving the rural problems, the school as a community center, the organization of the community activity and forces, the revised program of studies, use of newly adopted text books, the duties of district and county superintendents such as visiting schools, aiding teachers, pupils and others.

The observation classes will be used to illustrate the principles of inspection and supervision and class criticism. 11:00; 17 W.

7. **Administration and Supervision of Schools.** (Credit: six weeks, 1½ hrs.) This course was offered in the Summer School of 1908; it is a continuation of Education 7 offered in 1911. It is primarily for principals and superintendents of schools. In the main it will be a study of the following topics:

1. The control of the school and delegated authority.
2. School buildings and school grounds.
3. The equipment of the school.
4. The school principal—his equipment, native and acquired.
5. The preparation of teachers—elementary and secondary.
6. Tests of teaching and tests of the school.
7. Examinations and tests.
8. Community organization for educational endeavor.
9. Reading as a school subject.

A proper use will be made of typical courses of study and systems of schools as found in this country. The classes for observation will furnish a concrete basis for the study and discussion of class-room supervision. 2:00; 17 W.

LLOYD LOWNDES FRIEND

G. **High School Administration.** (Credit: six weeks, 1½ hrs.) This is a short course intended primarily for high school principals and teachers. A brief survey will be made of the history of the American public high school. The place and function of the high school will be considered and attention will be given to the organization and management of high schools. A study of some present day high school problems will be made and special attention will be given to peculiar high school problems in West Virginia. The work will be carried on by means of lectures, class discussion and reports. 8:00; 19 W.

ELEANOR WRIGHT

H. **Conference on Methods and Principles of Primary Teaching.** (No credit.) 2:00; 12 M.

OBSERVATION CLASSES—PRIMARY AND GRAMMAR GRADES

The observation classes will be conducted by Miss Sarah E. Griswold and Miss Lucy M. Doyle, Critic Teachers in the Chicago Normal School, and Miss Eleanor Wright, of Columbia University. The work will consist of lessons given to pupils of first to eighth grades, for the observation and criticism of teachers who desire to take this work. Special study will be made of the selection of subject matter, together with its organization, preparation and presentation; also of the principles illustrated by the specific lessons. Methods of teaching children how to study, and various mediums of expression, including dramatization, hand-work and seat-work, will be considered.

The recitation periods of the classes for observation will not exceed thirty minutes. Students taking the observation work can, therefore, adapt it to their courses in other subjects so as to have no conflicts.

Two periods a day should be the maximum time spent in observation work. Every student in the Summer School should do some regular, systematic class work, academic or professional, or both Those who observe but do no class work should, at least, devote a part of their time to systematic reading in the library on the subjects of their observation work. Students desiring certificates for observation work will be required to do some reading and reporting on the lessons observed.

Grammar Grades

SARAH E. GRISWOLD AND LUCY M. DOYLE

Classes of Fourth to Eighth Year Pupils, Inclusive.

The work of these classes will include the subjects taught in the public schools. Special effort will be made to organize and present the topics selected so that the children will develop power of initiative, acquire freedom and spontaneity in expression and gain ability to handle new problems with increased intelligence and purpose.

The program of work for these grades will be arranged to illustrate a departmental plan of teaching.

MISS GRISWOLD, 11 M.
MISS DOYLE, 10 M.

Primary Grades

ELEANOR WRIGHT

Classes of First, Second and Third Year Pupils.

The work of these classes will include the subjects studied by first, second and third year pupils in the public schools. It is the purpose of this work to show how the present-day "aim of education" should be recognized for the improvement of school-room practice. This will involve the question of resultant changes in subject matter, methods of instruction, and manner of dealing with children in school. In view of this work there will be considered:

1. What are the factors conditioning the teaching process?
2. What types of lessons may be used?
3. What shall be the children's activity in a lesson? The teacher's? 14 M.

PUBLIC SCHOOL DRAWING AND HANDWORK

LILLIAN FLIEGE

A. **Drawing and Constructive Work in Primary and Intermediate Grades.** (No credit.) Plant life, landscape, the figure, and animal drawing, using clay, water-color, colored crayon, and pencil. Weaving and paper construction. Blackboard drawing. Sand table. 10:00; L.

B. **Drawing and Constructive Work in Grammar Grades.** (No credit.) A study of form, proportion and color in common objects, in plant life, landscape, animals. and the figure. The foreshortened circle and angular perspective. Outdoor sketching, blackboard drawing, design and handicraft. 3:00; L.

C. **Public School Handiwork.** (No credit.) Handicraft, basketry, weaving, block printing, stenciling, and clay modeling. 11:00; 14 W.

ENGLISH LITERATURE AND COMPOSITION

ROBERT ALLEN ARMSTRONG

43. **Types of American Fiction.** (Credit: 1 Hr.) The types studied will be as follows: (a) The Romance of adventure (Cooper's Pathfinder); (b) The psychological romance (Hawthorne's The House of the Seven Gables); (c) The realistic novel of average life (Howell's The Quality of Mercy); (d) The realistic novel of unusual life (James's The Princess Casamassima; (e) The early romantic tale

(Irving, Poe, Hawthorne); (f) The realistic short story (James and Miss Wilkins).

First six weeks, M., T., W., Th., F., 8:00; W., 31.

26. **A General Survey of English Literature.** (Credit: nine weeks, 2 Hrs.) An introdutcion to the study of literature. This course includes an historical view of the latter half of the field of English literature, and a close, critical study of a few classics from each of the great periods of literary development covered by the course.

M., T., W., Th., 9:00; 31 W.

28. **Shakespeare.** (Credit: six weeks, 1½ Hrs.) Three plays will be studied: Othello, Much Ado, and Macbeth. Chief attention will be given to literary interpretation, but there will be such study of sources, dramatic form, and language as may be necessary to a clear understanding of the plays read. 10:00; W., 31.

DAVID DALE JOHNSON

C. **Grammar and Correct Usage.** (One-fourth unit entrance credit.) Lectures and discussions on the following topics: (1) The English sentence; its forms, its elements and constructions; its analysis and diagramming; its punctuation. (2) Grammar; textbooks; methods of teaching; difficulties and disputed points; common errors. (3) English words; the laws of good usage; barbarisms and improprieties; clearness, force and ease of diction; English idioms.

First six weeks, daily, 9:00; 21 W.

A. **Preparatory English.** (One-fourth unit entrance credit.) This course is designed primarily for those who wish to complete the work in English required for college entrance. Study of several English classics; review of high school rhetoric; one or two themes weekly. The exact character of the work done will be determined by the needs of those who register for the course.

M., T., Th., F., 11:00; 21 W.

D. **Teachers Courses in English Composition.** (Credit in proportion to the amount and character of the work done.) The course is open to all students without reference to their previous training in English composition. A practical drill in composition adapted to the individual needs; themes; oral and written exercises; materials and methods for teaching oral and written composition.

T., Th., 10:00; Conference hour to be arranged.

1. **Composition and Rhetoric.** (Credit: six weeks, 1 Hr.; nine weeks, 1½ Hrs.) Primarily for college students. The course is the same as the first half of English 1 in the College of Arts and Sciences. Study of textbooks; two themes weekly; class compositions; criticism and discussions. M., W., F., 10:00; 21 W.

FRENCH

MADISON STATHERS

A. **Elements of French.** (No credit.) The essential principles of grammar including the most common irregular verbs. Composition, pronunciation and easy translation. This course is designed for those who wish to acquire a reading knowledge of the language in as short a time as possible and, while no credit is given for it, qualified students may later enter the regular first year class of the University at such a time in the first semester as their advancement merits and take the examination on the semester's work. Five hours a week for six weeks. 8:00; 11 W.

3. **Fiction of the Nineteenth Century.** (Credit: 1½ Hrs.) Reading and study of representative works from Merimee, George Sand, Victor Hugo. Dictation, syntax and composition. M., W., F., 9:00; 11 W.

7. **Literature of the Seventeenth Century.** (Credit: 1½ Hrs.) The work centers on the life and writings of Corneille but is accompanied by lectures on the origin of the drama, development of the language and influence of Corneille's precursors and contemporaries. Essays, collateral reading and reports. M., W., F., 10:00; 11 W.

B. **Teachers Review Course.** (No credit.) The work of this course includes the study of pronunciation, phonetics and grammatical construction, the discussion of books, periodicals, courses of study and class-room problems, and sufficient reading and composition to illustrate the work. Open to students who have had at least two years in French. From three to five times a week for six weeks. 11:00; 11 W.

Note:—Demands for other courses in Romance Languages will be met as far as possible.

LATIN

ALFRED JARRETT HARE

A. **Elementary Latin.** (No credit.) This course is for beginners and those desiring to review. The work will be pronunciation, declensions, inflection, and easy translations to illustrate the forms and the simpler grammatical relations. 8:00 a. m.; 22 W.

B. **Caesar.** (Entrance credit according to work done.) This course is for those who are preparing to teach elementary Latin and may be used for credit on entrance to the University. Careful translation, grammatical relations, with especial attention to indirect discourse. 9:00; 12 W.

Latin 6 or 8. (Credit according to work done.) A class will be taught in one or the other of these courses for which there is the larger demand. The work will include translations, grammatical constructions, historical, biographical, and mythological allusions found in the text studied. 10:00; 12 W.

Latin 10 or 11. (Credit according to work done.) Either Cicero's De Amicitia or De Senectute, or Horace's Odes books I. and II. and the Carmen Saeculare will be read. The demand will determine the particular course given. 11:00; 12 W.

HISTORY

OLIVER PERRY CHITWOOD

1. **A History of Rome.** (Credit: six weeks, 1½ Hrs.) A study of the Roman republic and empire. The aim of this course is to trace the development of Roman institutions, character, and civilization, to explain the genius of the Roman people for organization and government, and to call attention to the contributions of Rome to modern civilization. M., T., Th., F., 11:00; 29 W.

12. **Mediaeval History.** (Credit: nine weeks, 2 Hrs.) This course begins with the period of institutional chaos following the breakup of the Roman empire, and ends with the rise of modern states. Special attention is devoted to the three prime factors in the history of the middle ages,—the surviving civilization of Rome, the Christian church, and the German people. Political history, except in the case of France,

is subordinated to the study of social and economic institutions—the church, feudalism, the crusades, schools and learning, commerce, and the rise of cities. T. W., Th., F., 10:00; 29 W.

13. **The Protestant Reformation.** (Credit: six weeks, 1 Hr.) A study of the Protestant revolution in the principal European states (including England), the counter reformation, and the religious wars to the Treatry of Westphalia, with emphasis on the revolt of the Netherlands and the rise of the Dutch Republic. M., T., Th., 9:00; 29 W.

15. **Europe in the Nineteenth Century.** (Credit: nine weeks, 1½ Hrs.) This course is devoted to an intensive study of political and social conditions in the more important states of Europe (including England) from 1815 to 1871. M., W., F., 8:00; 29 W.

MATHEMATICS

JOSEPH ELLIS HODGSON

A. **Algebra.** (Entrance credit according to work done.) Review up to quadratic equations. Quadratic equations and graphic algebra. 9:00; 16 W.

B. **Plane Geometry.** (Entrance credit according to work done.) Review course. Exercises in algebraic geometry. 11:00; 16 W.

4. **Plane Trigonometry.** (Credit: nine weeks, 2½ Hrs.) Development of formulae. Solution of trigonometrical equations; antitrigonometric functions; practical exercises and problems. 10:00; 16 W.

5. **Analytic Geometry.** (Credit: nine weeks 2½ Hrs.) A course including the essentials of plane analytic geometry. (Hours to be arranged.) 8:00; 16 W.

Note:—Courses other than those announced above will be given if the time of the instructor permits. An effort will be made to give whatever is called for.

AGRICULTURE

E. DWIGHT SANDERSON, I. S. COOK, W. H. ALDERMAN,

C. A. LUEDER AND C. R. TITLOW

A. **Elementary Agriculture.** (Credit: six weeks, 1½ Hrs.) An elementary study of general agriculture, adapted to the needs of rural school teachers; seed improvement; soil culture; live stock improvement; gardening; rural organizations, etc. Emphasis will be placed upon the subject matter of agriculture, with a discussion of the methods of teaching the subject, which will help the teacher in the rural school in the use of text-books and illustrative materials. Lectures, recitations, and field work. Four recitations; two afternoons laboratory or field work. Section 1, 8:00; section 2, 9:00; 7 M.

E. W. SHEETS

B. **Secondary Agriculture.** (Credit: six weeks, 1½ Hrs.) A comprehensive study of agriculture as adapted for instruction in the high school. Warren's Elements of Agriculture will be used as a text, and will be supplemented by lectures and suggestions concerning illustrative materials and field work. Consideration will be given to making the high school the center for community work in agriculture. This course is designed for high school teachers and superintendents. Four recitations and lectures, and two afternoons laboratory or field work. 8:00; 7 M.

BOTANY AND NATURE STUDY.

A. B. BROOKS

5 **Systematic Botany of Seed Plants.** (Credit: six weeks, 1 to 1½ Hrs.) Principles of classification of the more important families. Practice in description, identification, and classification. Class work, 11:00, daily; laboratory and field work. N. F.

D. **Elementary Nature Study.** (Credit: six weeks, 1½ Hrs.) An elementary study of some of the common objects of nature, offered especially for teachers of primary grades.

Class work 10:00, daily; laboratory or field work, 4:00 M. H.

C. **Nature Study.** (Credit: six weeks, 1 Hr.) This course has been arranged for those who expect to teach nature study and elemen-

tary agriculture in the public schools. A portion of the time will be used for informal talks on methods of presenting the subject, but more emphasis will be given to a study of objects at first hand, either in the laboratory, or field, than to a study about objects. The course includes (1) a study of rocks, soils, plants, insects, birds, and mammals in their relation one to another and to man. (2) the collection of specimens, and (3) reports on assigned topics and observations made in the laboratory and field.

First division, 8:00, M. daily; laboratory or field work, M. Th., 4:00; M. H.

Second division, 9:00 M., daily; laboratory or field work, T. and F., 4:00; M. H.

CHEMISTRY

FREDERICK LAWRENCE KORTRIGHT

FRANK VANDERSLICE SANDER

A. **General Chemistry.** (Credit: six weeks, 1 Hr.) This course is designed for beginners and serves as a general introduction to chemical study. It is general rather than technical in its nature. In includes the study of some of the most important elements and special attention is directed to the application of chemistry to agriculture, botany, geology and other scientific branches of study. The course is especially adapted to the needs of science and nature study teachers. Instruction is given by lectures and these are fully illustrated by experiments. 11:00; 20 S.

B. **Synthetic Inorganic Chemistry.** (Credit: six weeks, 1½ Hrs., nine weeks 2½ Hrs.) A laboratory course for teachers of chemistry and others wishing to supplement previous work in general chemistry. Courses 1 and 2 of the University Catalogue or their equivalent are prerequisite. 1:00-3:00; 33 S.

4. **Qualitative Analysis.** (Credit: six weeks, 1½ Hrs., nine weeks, 2½ Hrs.) A laboratory course treating of the separation and detection of the more common elements. 10:00-12:00; 33 S.

6. **Elementary Quantitative Analysis.** (Credit: six weeks, 1 Hr.) This course includes a small number of simple gravimetric, volumetric and electrolytic determinations, together with the study of the operations involved. 1:30; 32 S.

C. **Analysis of Coal, Coke and Water.** (Credit: six weeks, 1 Hr.) This is a course designed especially for engineering students, but open to others who have the necessary preliminary training. 1:00; 32 S.

7. **Quantitative Analysis.** (Credit according to the amount of work done.) Students registering for this course will be assigned such work as they are prepared to do. Hours to be arranged. 1:00; 32 S.

ENTOMOLOGY

L. M. PEAIRS

A. **General Entomology.** (Credit: six weeks, 1½ Hrs., nine weeks, 2½ Hrs.) A course designed to give the student without previous knowledge of the subject, an acquaintance with the more common forms. The course will include lecture and class room work on the classification, structure, and habits of insects and will be supplemented by actual observation in the field, and by laboratory exercise in the preservation of specimens, the structures of insects as illustrated by certain typical forms, and the classifications, by means of keys, of the more common insects collected by the student. Five lecture periods and three afternoons laboratory and field work per week. 11:00; E. S.

B. **Economic Entomology.** (Credit according to the amount of work done.) Courses involving the study of injury done by insects and means employed to prevent such injury will be given if a sufficient number of students wish it. 11:00; E. S.

HOME ECONOMICS

RACHEL HARTSHORN COLWELL

1. **Selection and Preparation of Food.** (Credit: six weeks, 1½ Hrs.) A study of the chemical composition, relative physiological and economic value of animal foods and their products; processes in production of raw food material. Practical application is given of the methods by which heat is applied to the foods. Recitations and laboratory work. 8 to 10; 2 W.

A. **Elementary Dietetics.** (Credit: six weeks, 1 Hr.) A study of the general composition of foods, their digestion, absorption, and as-

similation; amounts of good required for normal adult at rest and at work. M., T., Th., F., 10:00; 2 W.

B. **Supervision in Domestic Science.** (Credit: six weeks, 1 Hr.) A brief survey of the subject matters; correlation with other subjects in high school curriculum; cost of equipment and maintenance of laboratory. T., Th., F., 11:00; 2 W.

HORTICULTURE

LUTHER F. SUTTON

Horticulture I. (Credit: six weeks, 1½ Hrs.; nine weeks, 2½ Hrs.) Plant propagation. Three hours credit. A practical course in the propagation of agricultural plants; preparing the seed bed; seed testing; planting seed in the greenhouse; field propagation by layerage, grafting, budding, and nursery practice. Four hours recitation and two afternoon laboratory per week. 9:00; 27 M., and Greenhouse.

PHYSICS

EUGENE CASSON CRITTENDEN

3. **College Physics.** (Credit: nine weeks, 2½ Hrs.) This course is intended for teachers of physics in secondary schools, but may be taken by students who have not taken physics in the University. (Preparatory or High School Physics is not a substitute for this course.) It consists of lecture-demonstrations, quizzes and problems. Current Electricity and Light are the topics to be covered in the term of 1912. Kimball's College Physics will be followed in the lectures and problems. 11:00; 12 S.

4. **Experimental Physics.** (Credit: nine weeks, 2½ Hrs.) This course consists of a series of experiments taken from Blaker's Experimental Physics and original laboratory notes. The student is expected to complete 20 experiments for the term's work. Student's who take this course are strongly advised to take course 3.
1:30; M., T., W., Th.; 11 S.

A. **Laboratory Methods.** (No credit.) This course is intended for teachers who wish to work over the graded list of experiments outlined in the Syllabus on High School Physics prepared by the State Department of Free Schools. Any modern laboratory manual of laboratory physics may be used. Particular attention will be given to the

design, cost and use of laboratory equipment for teaching physics in the high school. 1:30; M., T., W., Th.; 11 S.

Students desiring work other than that outlined above will be accommodated if the time of the instructor permits.

ZOOLOGY.

ALBERT MOORE REESE

1. **Zoology.** (Credit: six weeks, 1 Hr., nine weeks, 1½ Hrs.) A brief survey of the various groups of invertebrates. The recitations will cover in a rapid way all of the principal groups, while in the laboratory as many types of animals will be studied as time will allow.
Recitations, T., Th., 8; Lab., Th., 1:30-4:00; 50 W.

2. **Zoology.** (Credit: six weeks, 1½ Hrs.; nine weeks, 2½ Hrs.) A course similar to Zoology I, but dealing with the vertebrates. In the laboratory a typical vertebrate, probably the frog, will be studied in detail. Recitations, T., Th., 10; lab., T., W., 1:30-4:00; 50 W.

9. **Zoology.** (Credit: six weeks, 1 Hr.) A practical course in the methods of collecting, preserving, dissecting for demonstration, making microscopic slides, etc. This course is intended primarily for teachers, and will continue for six weeks only.
Lecture, W. 8; lab., M., T., 1:30-4:00; 51 W.

10. **Zoology.** (Credit: six weeks, 1 Hr.) This is a lecture course dealing with various phases of animal life, such as regeneration, parasitism, symbiosis, distribution, organic evolution, etc. It is a sort of general information course. It is not intended primarily for credit, but those who desire may, by doing extra reading and by taking examinations, obtain one hour credit. It will continue for six weeks.
M., T., Th., F., 11:00; 49 W.

LIBRARY SCIENCE

L. D. ARNETT

A. **Library Science.** (Credit according to work done.) The course in Library Science will include instruction in the use of indexes, card catalogue, and reference books; instruction and practice in cataloguing and classification; selection and purchase of books; binding, loan desk record, etc.

The object of the course is to acquaint the student first with the more important library "tools" and then in a general way with library methods. 8:00; L.

MECHANIC ARTS AND MANUAL TRAINING

JOHN B. GRUMBEIN

1. **Woodworking.** (Credit in proportion to work done.) Includes instruction in carpentry, joinery, and other bench work; exercises with the fundamental edge tools in soft and hard woods, and in matching, molding, joining, and making typical framed work; woodturning, comprising the fundamental geometric forms in soft and hard woods; fitting forms of reversed curves; face plate work, chucking, boring, finishing, and polishing. 21 M. H.

2. **Woodworking.** (Credit in proportion to work done.) Advanced work for special students. In this course the student is permitted to specialize along the lines of his choice. The amount of credit to be given depends upon the amount of time spent in the shop and the progress made by the student. Hours to be arranged. 21 M. H.

3. **Tin-Smithing.** (Credit in proportion to work done.) Tinning and use of coppers. Solder-jointed work done in tin and sheet iron; laying-out, cutting, and forming sheet-metal. 7 M. H.

4. **Mechanical Drawing.** (Credit in proportion to work done.) Plain lettering, care and use of drawing instruments, selected geometric construction, line exercises, finished drawing; isometric, cabinet and orthographic projection, working drawings from models and blue prints, tracing, and blue printing; mimeographed notes, blue prints. 25 M. H.

5. **Principles of Manual Training.** Lectures and recitations on principles and methods of teaching in manual training and industrial schools. 16 M. H.

(Note:—For hand work for grade teachers, see announcements under head of "Public School Handwork.")

PHYSICAL TRAINING

Recreation. Games. Playground Work. Athletics.

Men's Department

DIRECTOR CHEZ

1. **Track Athletics, Theory and Practice.** (No Credit.) Technique of track and field athletics. Systematic preparation for indoor and outdoor events. Hours to be arranged; G.

12. **Construction and Equipment.** (No credit.) Gymnasium; athletic field; playgrounds; organizing the department. Specially adapted for public and high school teachers. Hours to be arranged; G.

A. **Baseball.** (No credit.) Daily, 4:00; Athletic field.

Women's Department

MRS. CHEZ

A. **Games, Rhythmic Exercises, Dances.** (No credit.) Theory and Practice. A study of playground and indoor calisthenics, play exercise, singing games, folk dances, etc., graded for adaptation to the various grades.

Demonstration classes, M. W., hours to be arranged; 1 W.

Practice class with children from the model school.
T. Th., hours to be arranged.

B. **Light Gymnastics, Aesthetic and Folk Dances.** (No credit.) Indian club, wand and dumb bell exercises and drills. Gymnastic and stage marching. Elementary fancy steps, pretty individual and class dances, and quaint folk dances. Hours to be arranged; 1 W.

C. **Athletics.** (No credit.) Tennis, long ball, base ball, volley ball, tether ball, basket ball, quoits, etc.

N. B.—For the first time both gymnasiums will be open to summer school students, from 8 A. M. to 5 P. M. daily.

Those having gymnasium or athletic suits, tennis shoes, or tennis rackets are advised to bring them.

MUSIC

Voice and Sight Reading

LOUIS BLACK

Individual instruction is offered in voice, either three lessons, two or one a week during the six weeks as the pupil may desire. A class is organized in sight reading The "moveable do" method is employed. This method is practical and has been successful in practical work for many years, particularly in public schools. The work will embrace some fundamental drill in harmony.

Other Courses in Music.

Instruction is also given in piano by Mrs. Ethel Borden Black and Miss Flora Ray Hayes; in violin and in ensemble classes by Miss Margaret Horne; in pipe organ by Mrs. Grace Martin Snee; and in musical theory and history by Miss Hayes. The work offered by Miss Hayes includes three courses in harmony, and special courses for teachers in elementary harmony and in history of music.

HISTORICAL LECTURE RECITALS

Six recitals will be given during the progress of the Summer School at which the Director of the School of Music will give lectures illustrated by programs, assisted by Miss Horne and Mrs. Black; a great composer, school or epoch being considered at each recital.

RATES OF TUITION

Voice

MR. BLACK

Six weeks, three lessons a week.....$25.00
Six weeks, two lessons a week.....$18.00
Six weeks, one lesson a week.....$10.00

Piano

MRS. BLACK

Six weeks, three lessons a week.....$25.00
Six weeks, two lessons a week.....$18.00
Six weeks, one lesson a week.....$10.00

MISS HAYES

Intermediate, six weeks, three lessons a week.....$18.00
Children's class, six weeks, three lessons a week.....$10.00

Violin

MISS HORNE

Six weeks, three lessons a week.....$18.00
Six weeks, two lessons a week.....$12.00
Six weeks, one lesson a week.....$ 8.00

Pipe Organ

MRS. SNEE

Six weeks, three lessons a week.....$25.00
Six weeks, two lessons a week.....$18.00
Six weeks, one lesson a week.....$10.00

Ensemble and Accompanying

MISS HORNE

Six weeks, three lessons a week.....$18.00
Six weeks, two lessons a week.....$12.00
Six weeks, one lesson a week.....$ 8.00

Sight Reading

MR. BLACK

Six weeks, three lessons a week.....$ 6.00

Theory

FLORA RAY HAYES

Harmony

Six weeks, three lessons a week.....$10.00

History of Music

Six weeks, three lessons a week.....$10.00

Pianos for Practice

One hour per day for six weeks, $2.50.
Two hours per day for six weeks, $4.00.
Three hours per day for six weeks, $5.00.
Clavier practice for six weeks, one hour per day, $1.00.
Organ practice, twice the cost of piano practice.

All tuition and other fees are payable in advance. Students can enter at any time.

SCHOOL OF METHODS FOR SUNDAY SCHOOL WORKERS

The eighth session of the School of Methods for Sunday School Workers will be held at West Virginia University from July 1 to July 7, 1912. As usual it will be held in connection with the University Summer School, but neither interferes with the other; indeed, each is of great benefit to the other.

No tuition fee is charged. A registration fee of one dollar is charged, but students registered in the regular Summer School are not required to pay even this nominal fee.

The purpose of the School of Methods is to give pastors, Sunday School superintendents and teachers an opportunity to be instructed in the most modern principles and methods of Sunday School work by some of the leading Sunday School Workers of America.

International Recognition

The International Department of Education will grant certificates to students according to the following standard:

A. Attendance of the student for at least 15 hours of the work.

B. Recommendation by the management of the school, based upon approval of note-books, or such other examination as they may require.

Attendance at the study hour will have weight with the management of the school in recommending students for recognition.

The detailed program is published in a separate pamphlet which may be had for the asking. The week will be filled with instruction of great practical value to all Sunday School superintendents, teachers, and others engaged in Sunday School work. For program of School of Methods for Sunday School Workers write to President Hodges. Morgantown, W. Va., or Arthur T. Arnold, General Secretary West Virginia Sunday School Association, Wheeling, W. Va.

THE DIVISION OF MILITARY SCIENCE AND TACTICS

THE FACULTY

THOMAS EDWARD HODGES, LL.D., *President.*

WILLIAM SEWARD WEEKS, B.Sc. *First Lieutenant 4th U. S. Infantry, Commandant of Cadets and Professor of Military Science and Tactics.*

This institution being one of the beneficiaries of the Act of Congress of 1862, instruction in military tactics is made compulsory for the freshman and sophomore years.

The Department is in charge of an officer of the United States Army, detailed by the War Department, as professor of military science and tactics. The Cadet Corps is inspected once each year by an officer of the General Staff of the Army.

All cadets are required to wear a neat appearing gray uniform at drill. This uniform may be worn with propriety on all occasions. Its cost is about $17.50.

All cadets are divided into two classes, i. e. State cadets and Volunteer cadets.

State cadets are those who receive appointments under the provisions of the following act of the legislature of the State of West Virginia.

Volunteer cadets are all other cadets belonging to the cadet corps of the University. They are required to purchase their own uniforms from the uniform tailor. The use of rifles and equipment is provided by the University.

Extract from the Military Law, State of West Virginia, Jan. 19, 1903:—"Each member of the Senate shall be entitled to appoint one cadet from his district, on or before the first day of June in the second year of his term, and one cadet on or before the first day of June in the fourth year of his term. Each member of the House of Delegates shall

be entitled to appoint one cadet from his county on or before the first day of June next preceding the end of his term. In case a cadetship filled by appointment by any member of the Legislature shall become vacant the member making the appointment, or his successor, shall fill the same by a new appointment within the limits of the time aforesaid. But no Senator or Delegate shall appoint any cadet until he receives a certificate from the President of the University, or the Commandant of Cadets, giving him notice of his right to do so; and he shall not have the right to exercise such power of appointment as long as two cadets are accredited to himself and his predecessor, either by original appointment or by re-enlistment. All other cadets necessary to make up the full complement of the corps shall be appointed by the regents, in proportion to their number, including vacancies, if any, caused by the failure of any member of the Legislature to fill his appointment. Cadets shall not be under sixteen years of age, and shall not be over twenty-two years of age. Their appointment shall be made upon undoubted evidence of good moral character and sound physical condition. Their term of enlistment shall be four years, but any cadet, at the expiration of his first term, shall be entitled to re-enlist for the further term of two years, upon giving notice of his intention to the commandant of Cadets at least thirty days before the expiration of such term. But not more than fifteen cadets shall be appointed from any Senatorial district, and not more than eight from any one county."

REQUIRED WORK IN MILITARY SCIENCE

The following order has recently been adopted by the State Board of Regents:

Ordered that all male students, with the exceptions hereinafter named, enroll themselves in the Department of Military Science and follow diligently the course of instruction provided therein. Proficiency in this course shall be required for graduation.

Practical and theoretical instruction shall be given four hours per week throughout the school year. A credit of one hour shall be given for each semester's work satisfactorily completed. Such credit shall be included in the computation of the student's standing at the end of each semester.

The following classes of students shall not be required to enroll themselves in the Military Department but may elect to do so:

(1) All students who are citizens of a foreign country and do not intend to become citizens of the United States.

(2) All students who at date of entrance in the University are more than twenty-three years of age.

(3) All graduate students.

(4) All students whose studies are entirely in the School of Music or Fine Arts.

(5) All students who are taking only the short course, or the special winter course, or agricultural extension work in the College of Agriculture.

(6) All students who are classified as juniors and seniors (third year and fourth year students) in the various colleges.

(7) All students who are physically unable to perform military duty.

(8) All students who are compelled to seek employment in order to defray expenses while in the University, providing that such employment cannot be arranged so as to not interfere with the drill hour. It is not the intention to force students to drill when to do so would practically compel them to leave the University. On the other hand, students can not be permitted to engage in other occupations which are not necessary for their support and be excused from drill on the ground that such employment occupies the drill hour. In such a case drill shall be regarded the same as any other study.

No cadet exempted from military drill by reason of self support shall be permitted to enroll himself in any student organization other than the regular literary or scientific organizations of the University.

A board, to be known as the Military and Gymnasium Board, shall be composed of the Commandant of Cadets, the Director of Physical Training, and a Surgeon of the Corps of Cadets, designated by the President. This board shall act upon claims for exemption from military service.

Students who claim exemption under any one of the first six cases must, within seven days after their registration in the University, present to the Commandant, in writing their request accompanied by such evidence as is relied upon to support the request. A failure to make the request within the stated time shall bar the student from claiming exemption.

Students who claim exemption under the seventh or eighth case must within seven days after their registration in the University present to the Commandant of Cadets, in writing, their request accompanied by such evidence as is relied upon to support the request. Applicants for exemption on the ground of physical disability shall be carefully examined by a surgeon of the Corps. A fee of one dollar to be paid to the examining surgeon shall be charged for such examination.

Students exempted under the seventh and eighth cases shall, upon recommendation of the Military and Gymnasium Board, be required to register for such physical training as they can take until they have earned a credit equal to that given for the prescribed military work.

In none of the preceding cases shall a student absent himself until his application has been acted upon.

It shall be the duty of the Commandant to notify the Chairman of the Committee on Classification and Grades whenever the Military and Gymnasium Board exempts a student or recommends that he be required to register for other than military drill.

Whenever the cause for exemption shall no longer exist, it shall be the duty of the student to present himself for drill at the next drill period.

Upon recommendation of the Athletic Board of Control, in writing, the Commandant of Cadets may excuse cadets to take part in athletics. Such cadets shall be excused during the active season only. No cadet shall be excused for practise in more than one class of athletics in any one year.

Students may appeal from the decision of the Commandant of Cadets or the Military and Gymnasium Board, in which case the appeal shall be decided by the Council of Administration.

All cadet officers taking military instruction as an elective shall be, as to their tuition and fees, on the same basis as state cadets.

SPECIAL REWARDS FOR MILITARY EXCELLENCE

The names of the three most distinguished cadets of the graduating class are published annually in the Army Register. One of these three may be designated each year to take the examination for commission in the Regular Army.

All graduates of the Military Department are eligible, within five years after graduation, to commissions as first lieutenants in the West Virginia National Guard, without examination.

The State Board of Regents offers the following medals as special rewards for excellence in military training:

(1) To the cadet having the best record for drill and discipline, a gold medal; (2) To the cadet having the highest aggregate score at target practice, a silver medal; (3) To the cadet having the second highest aggregate score at target practice, a bronze medal.

ARMORY

The Armory (60 by 120 feet) is used as a drill hall during inclement weather. This building is the home of the cadet corps, and all entertainments given by them are held therein, under the supervision of the Commandant of Cadets.

ADMINISTRATION AND INSTRUCTION

For the purpose of administration and drill the cadet corps is organized as an infantry battalion.

The work in the Military Department is taken in connection with other University work, and requires about four hours each week. The course of instruction is intended to fit all who graduate therein to perform efficiently the duties of officers in the National Guard of West Virginia. The Winter months are devoted to theoretical instruction in tactics and other military subjects, together with practical instruction in drill and in gallery practice.

BAND

A band of thirty-two musicians is authorized by the Board of Regents. Band cadets are volunteer cadets. They receive the same allowances as state cadets and are governed by the same rules and regulations. They are required to be instructed in military drill to include the school of the soldier and of the squad.

INFORMATION FOR APPLICANTS FOR APPOINTMENT TO THE CADET CORPS

1. The applicant must not be under sixteen nor over twenty-two years of age.

2. He must be a bona fide resident of West Virginia.

3. He must be sound physically and of good moral character.

4. He must make a deposit of $20.00 with the treasurer of the University as a guaranty that property issued to him will be taken care of. This deposit will be returned to him at the end of his enlist-

ment of four years, upon satisfactory settlement with the quartermaster.

5. He must make an average grade each semester of not less than sixty on a scale of one hundred, in order to hold his appointment.

6. State cadets are furnished with a uniform. They are allowed free stationery and the use of text-books to the value of $15.00 a year They pay no matriculation, tuition, or contingent fees to the University. If they are graduated from any department of the University while members of the cadet corps, they are allowed to retain their text-books.

7. The work of the corps does not interfere with the student's scholastic duties. Cadets may take courses in any of the departments of the University.

8. A young man desiring an appointment should apply to the regent for his county, or to a member of the Legislature representing his county. The counties of the state are divided as follows by the Board of Regents for the purpose of cadet appointments:

REGENT E. W. OGLEBAY, Wheeling, W. Va.
First, Second, and Eleventh Districts. Brooke, Hancock, Ohio, Marion, Tyler, Wetzel, Marion, Monongalia, Taylor.

REGENT J. B. FINLEY, Parkersburg, W. Va.
Third, Tenth, and Twelfth Districts. Pleasants, Ritchie, Wirt, Wood, Braxton, Calhoun, Gilmer, Pocahontas, Webster, Doddridge, Harrison, Lewis.

REGENT G. S. LAIDLEY, Charleston, W. Va.
Seventh, Eighth, and Ninth Districts. Mercer, Monroe, Raleigh, Sumers, Boone, Kanawha, Logan, Clay, Fayette, Greenbrier, Nicholas.

REGENT G. A. NORTHCOTT, Huntington, W. Va.
Fourth, Fifth, and Sixth Districts. Jackson, Mason, Wayne, Roane, Cabell, Lincoln, Putnam, McDowell Mingo, Wyoming.

REGENT M. P. SHAWKEY, Charleston, W. Va.
Thirteenth, Fourteenth, and Fifteenth Districts. Barbour, Pendleton, Randolph, Upshur, Grant, Hardy, Mineral, Preston, Tucker, Berkeley, Hampshire, Jefferson, Morgan.

9. Students who have cadet appointments should upon their arrival at the University present themselves at the office of the Com-

mandant, in the armory, and obtain the necessary information about registering, etc.

10. The number of state cadets allowed by law is 225.

11. Any cadet who is absent without leave for more than ten days will forfeit his appointment.

COURSES OF INSTRUCTION

The following courses in Military Science and Tactics are offered, each course requiring four hours practical work or two hours practical work and one recitation per week, for which a credit of one semester hour is given.

1. Military Science. (1 Hr.) (a) Practical: infantry drills, bayonet exercise, gallery practice and setting up drill. (b) Theoretical: recitations in Infantry Drill Regulations, U. S. Army, paragraph 1 to 346, inclusive.

First semester: M. T. W. T., 12:00; Lieutenant WEEKS, and Cadet Officers, A.

2. Military Science. (1 Hr.) (a) Practical: same as course 1 with addition of guard duty and range practice. (b) Theoretical: Recitations in Infantry Drill Regulations, U. S. Army, paragraphs 708 to 765 inclusive and Manual of Guard Duty.

Second Semester: M. T. W. T., 12:00; Lieutenant WEEKS and Cadet Officers, A.

3. Military Science. (1 Hr.) (a) Practical: same as course 1. (b) Theoretical. recitations in Infantry Drill Regulations, U. S. Army paragraphs 350 to 707 inclusive.

First semester: M. T. W. T., 12:00; Lieutenant WEEKS and cadet Officers, A.

4. Military Science. (1 Hr.) (a) Practical: same as course 2. (b) Theoretical: Recitations in Infantry Drill Regulations U. S. Army paragraphs 766 to 807 inclusive, and in Small Arm Firing Regulations U. S. Army.

Second semester: M. T. W. T., 12:00; Lieutenant WEEKS, and Cadet Officers, A.

5. Military Science. (1 Hr.) (a) Practical: same as course 1. (b) Theoretical: Field Service Regulations, U. S. Army.

First semester: M. T. W. T., Lieutenant WEEKS, and Cadet Officers, A.

6. Military Science. (1 Hr.) (a) Practical: same as course 2. (b) Theoretical: recitaitions in Field Service Regulations, U. S. Army,

Second semester: M. T. W. T., 12:00; Lieutenant WEEKS, and Cadet Officers, A.

7. Military Science. (1 Hr.) (a) Practical: same as course 1. (b) Theoretical: recitations in Marshall's Military Primer.

First semester: M. T. W. T., Lieutenant WEEKS, and Cadet Officers, A.

8. Military Science. (1 Hr.) (a) Practical: same as course 2. (b) Theoretical: recitations in U. S. Army Regulations and Manual of Courts Martial.

Second semester: M. T. W. T., 12:00; Lieutenant WEEKS A.

MILITARY GRADUATES AND DISTINGUISHED CADETS

Reported at Commencement, June, 1911.

The following are announced as distinguished cadets:

Cadet Captain Charles G. Baker, Co. "C."
Cadet Adjutant Harry G. Wheat, Staff.
Cadet Captain John L. Robinson, Co. "A."

The following named cadets having completed the prescribed course of instruction are announced as graduates of the Department of Military Science and Tactics:

Cadet Major George W. Grow,
Cadet Captain Claude Tetrick,
Cadet Captain Harry G. Wheat,
Cadet Captain John L. Robinson,
Cadet Captain Neal M. Heflin.

Upon the decision of the Judges, the cadet colors for the ensuing year were awarded to Company "C."

Upon the decision of the Judges, the sabre offered by M. C. Lilley & Co., to the Captain of the best drilled company, is awarded to Cadet Captain Charles G. Baker, company "C."

The medals offered by the Board of Regents are awarded as follows:

(1) The gold medal for drill and discipline, to Cadet Sergt. H. C. Fortney, company "C."

(2) The silver medal for the highest aggregate score at target practice, to Cadet 1st Lieut. Frank V. Sander.

(3) The bronze medal for the second highest aggregate score at target practice, to Cadet Private Jose D'A. Kirk.

ROSTER OF THE CORPS OF CADETS

William S. Weeks,	2d Lieutenant 4th Infantry, Commandant
George W. May,	Ordnance Sergeant, U. S. A. Retired, Armorer.

FIELD AND STAFF

Harry G. Wheat,	Cadet Major
John N. Simpson,	Captain, Surgeon
Charles G. Baker,	Cadet Captain, Adjutant
Leonard J. Bernstein,	Cadet Captain, Unassigned
Neal M. Heflin,	Cadet Captain, Unassigned

NON-COMMISSIONED STAFF

Truman M. Martin,	Cadet Sergt. Major
Orton E. Duling,	Cadet Quartermaster Sergeant
Robert L. Bates,	Cadet Color Sergeant
Irl N. Duling,	Cadet Color Sergeant

BAND

Walter A. Mestrezat,	Chief Musician
Leonard L. Finch,	Cadet Principal Musician
Clifford R. Snider,	Cadet Drum Major

Cadet Sergeants

Arthur L. Frye,	Horace S. Meldahl
Richard R. Feller,	Edgar F. Heiskell

Cadet Corporals

John H. Beaumont,	Harry R. Cronin
Nathan C. Burdett,	Harry L. Doxsee,
Howard C. Brown,	Harold B. Marr
Fillmore Compton,	Clyde L. Walker

COMPANY "A"

Milton D. Fisher, Cadet Captain
James C. Allen, Cadet 1st Lieutenant
John L. Stewart, Cadet 2d Lieutenant
J. French Robinson, Cadet 1st Sergeant

Cadet Sergeants

Charles R. Foltz, David R. Dodd,
Martin L. Bonar, Christian Sander.

Cadet Corporals

Robert L. Hogg, Harley L. Crane,
Ajax T. Smith, Elvin A. Hamilton.
Earl G. Kaltenbach,

COMPANY "B"

Eugene E. Evans, Cadet Captain
Stephen P. Hoskins, Cadet 1st Lieutenant
Charles S. Robinson, Cadet 2d Lieutenant
Glen F. Williams, Cadet 1st Sergeant

Cadet Sergeants

Artie R. Groves, Jose 'D' A. Kirk
Joseph S. Miller, Philip M. Conley.

Cadet Corporals

Max Wright, Edwin Bjornson,
Robert M. Strickler, Carl R. Duncan.
Eric A. Foulk,

COMPANY "C"

Frank V. Sander, Cadet Captain
Lewis G. Burrell, Cadet 1st Lieutenant
John Y. York, Cadet 2d Lieutenant
Frederick B. Morgan, Cadet 1st Sergeant

Cadet Sergeants

Hugh G. Fortney,
Jesse J. Jenkins,
Claud C. Spiker,
George G. Davis.

Cadet Corporals

Fred L. Lemley,
George Kerns,
Samuel A. Kelley,
James P. Weaver,
Joseph H. Stansberry.

DEGREES DIPLOMAS AND PRIZES

FORTY-THIRD ANNUAL COMMENCEMENT, JUNE 13, 1911.

CANDIDATES FOR DEGREES

Master of Arts

NYNA LUCY FORMAN, B.S., West Virginia University, 1910	Morgantown
ELLA MAY TURNER, A.B., West Virginia University, 1906	Shepherdstown
OTIS GUY WILSON, A.B., West Virginia University, 1907	Elkins

Bachelor of Arts

CLAY DILLE AMOS,	Fairmont
CHARLES GEORGE BAKER,	Morgantown
EDWARD SIDNEY BOCK,	Clarksburg
ANNA GRACE COX,	Millwood, Va.
STANLEY RHEY COX,	Morgantown
CLARA ELIZABETH DICKASON,	Columbus, O.
JOHN CALVIN ELY, JR.,	Finleyville, Pa.
EVA MYRTELLE FLING,	Alfred
JOHN DUNHAM GARRISON,	Sistersville
HARRY LEWIS GRIFFIN,	Belington
BENJAMIN FRANKLIN HAUGHT,	Atwood
ARTHUR BROWN HODGES,	Buckhannon
MARIE CLASINE BERGHUIS-KRAK.	The Hague, Holland
NANCY PURLEY MORGAN,	Alexander
ROBERT SIDNEY REED,	Boothsville
FRANK REEVES,	Fairmont
PEARL LOUISE REINER.	Morgantown
JOHN LOWRIE ROBINSON,	Uniontown, Pa.

GOLDIE SHEETS, Morgantown
GENEVIEVE STEALEY, Clarksburg
WILLIAM REYNOLDS THACHER, Williamsburg
EWARD HILL TUCKWILLER, Morgantown
HORANCE LABAN WHITE, Bristol
HELEN MERWIN WIESTLING, Wheeling
EMILY JOSEPHINE WILMOTH, Elkins
STELLA REBECCA WILSON, Harrisville
VIOLA AMANDA WOLFE, Wheeling

Bachelor of Science

MARCUS ORRAN BOND, Wheeling
JULIUS HENRY HEFKE, Dayton, O.
CHARLES MELVIN LOUGH, Cameron
HERMAN DIEDLER POCOCK, Morgantown
LONNIE WATTERSON RYAN, Morgantown

Bachelor of Laws

SAMUEL BIERN, Huntington
EDWARD SIDNEY BOCK, Clarksburg
GUY HERMAN BURNSIDE, Clarksburg
ARTHUR JEROME DAILEY, Buckhannon
LEE FRANK EVERHART, Buckhannon
SIDNEY LOTH FRIEDMAN, Point Pleasant
GEORGE HUTCHINSON GUNNOE, Crany
GLENN HUNTER, Morgantown
BURRELL KEMP LITTLEPAGE, Charleston
CHARLES WILLIAM LOUCHERY, Clarksburg
A.B., West Virginia University, 1910
LAWRENCE LEDWITH MCCLURE, Wayne
A.B., Amherst College, 1910
JOSEPH COCHRAN VANCE, Morgantown
A.B., West Virginia University, 1910

Bachelor of Science in Civil Engineering

HOWARD KENWELL BIRRELL, Weston
HARRY LUCAS CAMPBELL, Little Hocking, O.
ROBERT ARBUCKLE HANDLEY, Lewisburg
DAVID BRIGHT REGER, Buckhannon
A.B., West Virginia University, 1909
HARRY COOPER STULTING, Alderson
RALPH THOMAS THAYER, Oakland, Md.

Bachelor of Science in Mechanical Engineering

GEORGE HAROLD CUMMINS,	Wheeling
HOMER ARTHUR HOSKINS,	Weston
IRVING HAYNE MORAN,	Manassas, Va.
LEROY HOLMES MORRIS (As of 1910)	Connellsville, Pa.
EDWARD CURTIS OLDHAM,	Moundsville
WALTER LOGAN PIPES,	Washington, D. C.
GEORGE TRUMAN TWYFORD,	West Union

Bachelor of Science in Engineering of Mines

RICHARD JESSE GOULD,	Parkersburg
DAVID HARMON KAHN,	Parkersburg

Bachelor of Science in Agriculture

WYLIE EVERETT LLOYD,	New Cumberland
HU SWISHER VANDERVORT,	Morgantown

Bachelor of Agriculture

GEORGE COLUMBUS STARCHER,	Weston

Doctor of Medicine

CLAUDE VERNON GAUTIER,	Huntington
ARCHIE CARL MOSES HALL,	Buckhannon
PAUL RIDER,	Tunnelton
WAITMAN FARNSWORTH ZINN,	Troy

Doctor of Veterinary Surgery

EVERETT FARL ALLMAN,	Jane Lew
ARTHUR ROBERT WILLIAMS,	Tunnelton

Diploma of Graduation in Law

ROY CLYDE DARBY,	Oil City, Pa.
HARRY WILLIAM KING, JR.,	Wheeling
JOHN HENRY ROBINSON,	New Martinsville

Diploma in Agriculture

THOMAS FREDERICK HANSBARGER,	Peterstown

Artist's Diploma, Voice

CHARLOTTE AMY BLAIR, Waynesburg, Pa.

Artist's Diploma, Piano

IVA ELENORA GINKEL, Fairmont
FLORENCE ANNA SMITH, Morgantown
ETHEL GRETCHEN WARRICK, Morgantown

Teacher's Certificate, Piano

MARY HELEN MESTREZAT, Morgantown
MAUD EDNA SIX, St. Cloud

PRIZES AND HONORS

The Inter-Society Prizes

For the Columbian Society,

Debate—$50.00

CHARLES RITCHIE.....Piedmont
EMORY LEDREW TYLER, Bar Law.....Keyser

Essay—$20.00

LIDA JANE SIX, Sophomore.....Hundred

For the Parthenon Society:

Oration—$30.00

JOHN HENRY MCGARRY, Bar Law.....Shenandoah Junction

Declamation—$15.00

PEARL SCOTT, Special.....Pennsboro

The James F. Thompson Prize in Anatomy

L. A. H. WALKUP, Junior.....Falling Springs

The Edward Thompson Company Prize

SIDNEY LOTH FRIEDMAN, Third Year Law.....Point Pleasant

The Tax Commission Prize

CHARLES GEORGE BAKER, Senior.....Morgantown

The Russell Love Morris Prize in Civil and Mining Engineering

HARRY COOPER STULTING, Senior.....Alderson
ROBERT ARBUCKLE HANDLEY, Senior.....Lewisburg

PHI BETA KAPPA

The following seniors were elected members of the Phi Beta Kappa Society:

ANNA GRACE COX, Milwood, Virginia
HELEN MERWIN WIESTLING, Wheeling
EDWARD SIDNEY BOCK, Clarksburg
ARTHUR BROWN HODGES, Buckhannon

LIST OF STUDENTS

STUDENTS ENROLLED IN THE COLLEGES

NOTE:—The following list includes the names of all students enrolled in the various colleges of the University, arranged in alphabetical order. Following each student's name and address are given his class, the course of study which he is pursuing, or the degree for which he is a candidate. The word freshman, sophomore, etc., following the student's name indicates his rank on the first day of January 1912. Students whose names are marked with an asterisk (*) are ranked as freshmen, but are conditioned in one or more preparatory subjects. Students marked as special students are classified in accordance with the regulations found on page 35 of the catalogue.

Abbott, Fred. Luther	Grafton	Soph., B.S.E.E.
Adams, Isaac Maxwell	Ravenswood	2nd Year Law
Adams, John Ross	Morgantown	Soph., B.S.M.E.
Adams, Charles Sisson	Morgantown	Fresh., B.S.M.E.
Allen, James Cornwall	St. Marys	Soph., B.S.M.E.
Amos, Frank Rezin	Fairmont	2nd Year Law
Amos, Curt Edgar	Fairmont	1st Year Law
Andris, Irene Marie	Morgantown	Sen., A.B.
Arnold, Jesse Lloyd	Moundsville	Fresh., A.B.
Arnold, Edna	Weston	Soph., A.B.
Ash, Irvin Oda	Middlebourne	Soph., A.B.
Atkeson, Leda Cordelia	Morgantown	Sen., A.B.
Ayer, Perie Blanche	Grafton	Fresh., A.B.
Bachman, Carl George	Wheeling	Jun., B.Sc.
Bailey, Sebie	Buckhannon	Fresh., A.B.
Baker, Charles George	Morgantown	1st Year Law, A.B., West Virginia University, 1911.
*Barber, Thomas Maxfield	Charleston	Fresh., B.Sc.
Barnes, Uriah	Morgantown	Special A.&S.

Barnett, Joseph, Jr.	Clarksburg	Soph., A.B.
Bates, Robert Lee	Kearneysville	2nd Year Law
Baugher, Edward James	Folsom	Jun., B.S.M.E.
Baumgartner, Hugh Homer	Morgantown	Fresh., A.B.
Beaumont, Catherine Elizabeth	Morgantown	Fresh., B.Sc.
Bell, Bessie Boyd	Glenville	Soph., A.B.
Bell, Ernest Roy	Fairmont	2nd Year Law
Bell, Alexander Deacon	Morgantown	Sen., B.S.M.E.
Berghuis-Krak, Jan Hendrik	The Hague, Holland	Sen., B.Sc.
Berisford, Halley Earl	Captina	Fresh., B.Sc.
Bernstein, Leonard Julius	Sutton	Sen., B.S.
Bierer, Joseph	Morgantown	Fresh., B.S.C.E.
Bishop, Charles Eric	Morgantown	Soph., A.B.
Blair, Thomas Jackson, Jr.	Weston	Fresh., B.S.C.E.
Blair, Jackson VanBuren, Jr.	West Union	2nd Year Law
Boggess, John Paul	Clarksburg	Fresh., B.Sc.
Bonar, Martin Loxley	Moundsville	Jun., B.Sc.
Booher, Wilford Jackson Weber	Moundsville	Fresh., A. B.
Borror, Bruce	Elkins	Soph., B.Sc.
Boughner, Jennie Delawder	Morgantown	Sen., A.B.
Boutwell, Louis Eugene	Lambertville, N. J.	Jun. A.B.
*Bower, Mary Mildred	Morgantown	Fresh., A.B.
Boyles, Mellville Peter	Philippi	Fresh., A.B.
Brake, Hyre Clyde	Auburn	Sen., A.B.
Brennan, William Joseph	Kingwood	1st Year Law
Britton, Luther Sherman	Morgantown	Grad., A.&S.
A.B., West Virginia University, 1910.		
Broadwater, Charles Lester	Harrisville	Jun., A.B.
Brooks, Alonzo Beecher	Morgantown	Sen., B.Sc.Agr.
Brown, Howard Condit	Charleston	Soph., B.S.M.E
Brown, Charles	Tunnelton	Fresh., A.B.
*Brown, Robert Ludington, Jr.	Parkersburg	1st Year Law
Brown, Iris	Morgantown	Soph., A.B.
Burdett, Nathan Clarkson	Charleston	1st Year Law
Burdette, William Alexander	Ona	Jun., B.S.C.E.
A.B., West Virginia University, 1893.		
Burrell, Lewis Glenn	Weston	Soph., B.S.C.E.
Byer, Herman Bailey	Parkersburg	Fresh., A.B.
*Cady, Margaret	Morgantown	Fresh., A.B.
Cady, Elizabeth	Morgantown	Fresh., A.B.
Caldwell, James Lewis	Huntington	2nd Year Law
Callander, Rilla May	Parkersburg	Fresh., A.B.

Campbell, Carl Bennison	New Kensington, Pa.	Fresh., B.Sc.
*Campbell, John William	Charleston	Fresh., B.Sc.Agr.
Carfer, Archie Boyd	Parkersburg	Soph., B.Sc.Agr.
Carmichael, James Morgan	Cameron	Fresh., A.B.
Carney, Florence Alfreda	Charleston	Fresh., A.B.
Carney, Herbert Luther	Charleston	2nd Year Law
Casto, Edna Lenore	Morgantown	Fresh., A.B.
Casto, Ethel Blair	Morgantown	Fresh., A.B.
Casto, Charles Clayton	Spencer	Soph., A.B.
Cather, Adrain Bush	Flemington	Special Eng'g.
Caulfield, Leo Patrick	Clarksburg	2nd Year Law
Chambers, Vannetta	Martinsburg	Fresh., A.B.
Charter, Lena Mabel	Ravenswood	Sen., B.Sc.
Chorpening, Rollo Irwin	Morgantown	Special Law
Clayton, Harry Paul	Wheeling	Fresh., B.Sc.Agr.
Clifford, Lucy Clare	Clarksburg	Sen., A.B.
Cobb, Minnie	Mercer's Bottom	Fresh., A.B.
*Cohen, Charles	Charleston	Fresh., A.B.
Coldsmith, Joseph Marion	Mt. Pleasant, Pa.	Fresh., A.B.
Cole, Jeremiah Wilson	Cameron	Soph., A.B.
Colebank, George Henry	Morgantown	Jun., A.B.
Compton, Ada Blanche	Keyser	Fresh., A.B.
Compton, Alfred Fillmore	Parkersburg	Fresh., B.Sc.
*Conaway, James Lawrence	Barrackville	Fresh., A.B.
Conaway, Ernest Daniel	Enterprise	Sen., A.B.
Conaway, Edmund Macaulay	Board Tree	Fresh., A.B.
Conley, Philip Mallory	Charleston	Soph. B.Sc.
*Coombs, Forest Pembrock	Morgantown	Fresh., B.Sc.
Coombs, Wayne Francis	Morgantown	Fresh., B.S.C.E.
Cordero, John Philander	Grindstone	Fresh., A.B.
*Core, Emmer Fleming	Buckhannon	1st Year Law
Core, Rebecca	Cassville	Soph., B.Sc.
Cottrill, Delford Lee	Normantown	Jun., B.Sc.Agr.
Courtney, John David	Morgantown	Fresh., B.Sc.Agr.
Covert, Leo	Moundsville	Grad., A.&S.
Cox, Nell Hazel	Fairmont	Jun., A.B.
Cox, Wayne	Morgantown	Soph., A.B.
Cox, Stanley Rhey	Morgantown	2nd Year Law
A.B., West Virginia University, 1911.		
Crane, Harley Lucius	Terra Alta	Fresh., B.Sc.Agr.
Crawford, Stephen Rowan	Philadelphia, Pa.	2nd Year Law
Crawford, Thomas Wilmer	New Cumberland	Sen., B.S.C.E.
Creel, Geo. Raymond	Morgantown	Fresh., B.Sc.

*Creel, Mary Gertrude	Morgantown	Fresh., A.B.
Crowl, Walter Beryl	Fairmont	Sen., B.S.M.E.
Curtis, Allan Walker	Elm Grove	Fresh., A.B.
Dadisman, Andrew Jackson	Grafton	Soph., B.Sc.Agr.
Dadisman, Samuel Houston	Grafton	Sen., B.Sc.Agr.
Davis, Gail	Morgantown	Sen., A.B.
Davis, Anna Beulah Christine	Morgantown	Jun., A.B.
*Davis, Richard Earle	Morgantown	Fresh., A.B.
Davis, George Garrett	Sutton	2nd Year Law
Dawson, Joseph Power	Charleston	Fresh., B.S,M.E.
Dean, David McConaughey	Morgantown	Soph., B.S.C.E.
Deem, Fred Blaine	Parkersburg	Fresh. A.B.
Diddle, Fred Harrison	Philippi	Fresh., A.B.
Dille, James Evans	Morgantown	Sen., B.Sc.Agr
Dille, John Adams	Morgantown	Fresh., B.Sc.
Dodd, David Rollin	Hedgesville	Jun. B.Sc.Agr.
Donnaly, Moses Starke	Charleston	Sen., B.S.M.E.
Dorsey, Sylvia Pearl	Moundsville	Special A.&S.
Dorsey, Henry	Pearl	Soph., B.Sc.Agr.
*Doxsee, Harry Le Grande	Bay Shore, N. Y.	Fresh., B.S.C.E.
*Duling. Orton Everett	Morgantown	Fresh., A.B.
Dunkle, John Lee	Deer Run	Sen., B.Sc.
Eagan, Fannie	Ronceverte	Sen., A.B.
Earle, Thomas Benton	Pine Grove	Fresh., A.B.
Easley, Garland Holbrook	Bluefield	Fresh., B.S.M.E.
Elson, Otto Dale	Wellsburg	Sen., B.S.C.E.
Emery, Blanche Frances	Sistersville	Jun., A.B.
Evans, Eugene Everly	Morgantown	Sen., B.Sc.
Evans, Joseph Earl	Short Creek	Fresh., B.Sc.
Faulkner, Frank Bishop	Morgantown	Sen., B.S.M.E.
Faust, Wirt Garie	Fairmont	Jun., A.B.
Feller, Richard Roeder	Martinsburg	Soph., B.S.C.E.
Felton, Albert	Parsons	Soph., B. Sc.
Fernandez, Eugenio	Rio Grande, P. R.	Jun., B.Sc.
Ferrell, James Abraham	Eugene	Special Law
Finch, Leonard Lloyd	Shinglehouse, Pa.	1st Year Law
Fine, Reuben	Martinsburg	1st Year Law
Fisher, Milton DeWitt	Morgantown	Sen., B.S.C.E.
Fitch, Estella Alice	Huntington	Fresh., A.B.
Fitzgerald, Lee Roy	Cameron	Soph., B.S.M.E.
Fleming, Arlington	Fairmont	Fresh., B.Sc.
Fleming, Carter Slocum	Fairmont	Special A.&S.

Fleshman, Howard Franklin	Morgantown	Sen., A.B.
Floyd, Charles Duffy	Glenville	2nd Year Law
Flynn, George McDowell	Charleston	2nd Year Law
Foltz, Charles Roy	Martinsburg	2nd Year Law
Fortney, Hugh Goff	Lumberport	Soph., B.S.M.E.
Foulk, Eric Anderson	Huntington	Soph., B.S.M.E.
Francis, Albert Galliton	Scottdale, Pa.	Special A.&S.
French, Robert Moss	Beckley	2nd Year Law
Frye, Arthur Leslie	Morgantown	Soph., B.Sc.
Gallup, William Henry	Morgantown	Grad., A.&S.
Gardiner, Mabel Henshaw	Martinsburg	Sen., A.B.
Gaskin, Walter Wesley	Fairmont	Sen, B.S.C.E.
Gibson, Alva Jason	Sutton	Fresh., A.B.
Gibson, Lloyd Camden	West Alexander, Pa.	Fresh., B.S.C.E.
Gibson, Joseph Vincent	Tunnelton	2nd Year Law
Gillespie, John Lewis	Charleston	Special Law
Gilmore, Esther Jean	St. Cloud	Sen., A.B.
Gist, Russell Henderson	Wellsburg	Fresh., B.Sc.Agr.
Gist, William Colver	Wellsburg	Grad., Agr.
A.B., West Virginia University, 1906.		
Gist, Maria Anna	Wellsburg	Fresh., A.B.
Goff, William Rush	Spencer	Jun., A.B.
Goff, Eustace Thomas	Burnt House	Soph., B.Sc.
*Goodwin, Spencer King	McMechen	Fresh., B.S.C.E.
Gott, Ernest Fred	Hinton	Soph., B.Sc.
Gorby, Clyde Otha	Moundsville	Fresh., A.B.
Graham, Thomas Edward, Jr.	Parkersburg	Fresh., A.B.
Gray, James Paul	Leechburg, Pa.	Fresh., B.Sc.
Greene, Harry Horten	Bridgeport	Soph., B.Sc.Agr.
Griffin, Alice Rector	Clarksburg	Fresh., A.B.
Griffin, Harry Lewis	Belington	1st Year Law
A.B., West Virginia University, 1911.		
Grimm, Homer Willard	St. Marys	Jun., B.Sc.
Grose, Edward Rutherford	Sago	Grad., A.&S.
A.B., West Virginia University, 1909.		
Grose, Sylvester Carson	Sago	Jun., A.B.
Groves, Homer David	Morgantown	Sen., B.Sc.Agr.
Grow, George Walter	Williamstown	Sen., B.S.M.E.
Grubb, Joseph Krause	Parsons	Jun., B.S.C.E.
Gunnoe, George Hutchinson	Crany	3rd Year Law
LL.B., West Virginia University, 1910.		
*Guseman, Sadie Ray	Morgantown	Fresh., B.Sc.

Hale, Ruth Regina	Weston	Fresh., A.B.
Hall, Emily Elizabeth	Keyser	Sen., A.B.
Hall, Jerome Venoir	Buckhannon	3rd Year Law
Harbert, Guy Morlan	Morgantown	Special Eng'g.
*Hardesty, Charles Howard	Mannington	Fresh., B.Sc.
Harper, Howard Morrell	Elkins	Fresh., B.S.M.E.
Harr, Herbert Milton	Beuna	Fresh., A.B.
Harrison, Samuel Robertson, Jr.	Clarksburg	Fresh., B.Sc.Agr.
Hathaway, Sylvester Erwin	Morgantown	Fresh., B.Sc.
Haworth, James Rodgers	Huntington	Soph., A.B.
Hays, Roy	Friendly	Fresh., A.B.
Hearn, William Oswell	Bluefield	Soph., B.Sc.
Hedges, Grover Foster	Spencer	3rd Year Law
Heflin, Neal Minter	Grafton	Soph., B.S.E.M.
Hennen, Robert David	Morgantown	Sen., B.S.C.E.
Herring, Nellie May	Kingwood	Jun., A.B.
Herring, Carrie Alice	Kingwood	Fresh., B.Sc.
Herring, Eleanor Emma	Kingwood	Soph., A.B.
Hickman, James Howard	Harrisville	Jun., A.B.
Hiland, Wayman L.	Matoaka	Fresh., B.Sc.
Hilborn, Claire Egbert,	Kane, Pa.	Grad., A.&S.
A.B., Allegheny College, 1911.		
Hill, William Everett	Middlebourne	Fresh., B.Sc.
Hodges, Charles Edward	Morgantown	Jun., A.B.
Hodges, Harry Curtis,	Keyser	Fresh., B.S.M.E.
Hodges, Mabel Clare	Morgantown	Sen., B.Sc.
Hodges, Eliza Pearl	Morgantown	Jun., A.B.
Hodges, Arthur Brown	Morgantown	2nd Year Law
A.B., West Virginia University, 1911.		
Hoffman, Alexander Campbell	Morgantown	Fresh., B.Sc.
*Hogg, Harriet Primrose	Wellsburg	Fresh., B.Sc.
Hogg, Robert Lynn	Morgantown	Soph., A.B.
Holroyd, Mary Manning,	Athens	Sen., A.B.
Hoover, Olive Foster	Morgantown	Jun., A.B.
Hoover, Lawrence Grant	Morgantown	Soph., A.B.
Hopkins, Wirt Simpson	Exchange	Soph., A.B.
Horan, Emmet	Summersville	Special Law
Hoskins, Stephen Paul	Weston	Soph., B.S.M.E.
*Houston, Georgie Carroll	Morgantown	Fresh., B.Sc.
Houston, June Carey	Morgantown	Sen., B.Sc. ,
Howard, Opal Flodell	Cameron	Special A.&S.
Hubbs, George Emanuel	Moundsville	Soph., A.B.
Huffman, Charles Ray	Fairmont	Fresh., B.S.M.E.
Humes, Harry Oliver	Mannington	Soph., B.S.M.E.

Humphreys, Harry Christopher	Organ Cave	Sen., A.B.
Hunt, William French	Morgantown	Sen., A.B.
Hupp, Edwin Erle	Parkersburg	Soph., B.Sc.Agr.
Ice, Lory Francis	Smithfield	3rd Year Law
Jacob, John Jeremiah, Jr.	Short Creek	Fresh., B.S.C.E.
Jamison, Fred Mueller	Fairmont	Fresh., B.Sc.
Jarrett, Hillard Wesley	Charleston	Fresh., B.S.M.E.
Jarrett, Mildred Launa	Shinnston	Soph., A.B.
Jemison, Lawrence Lee	Middlebourne	Soph., B.S.C.E.
Jenkins, Jesse J.	Uffington	Soph., B.Sc.
Johnson, Richard William	Union	Jun., B.Sc.Agr.
*Johnston, Ollie May	Morgantown	Fresh., A.B.
Jolliffe, Byron	Morgantown	Fresh., B.Sc.
Jones, John Paul	Sistersville	Soph., B.Sc.
Kaltenbach, Earl George	Wheeling	Soph., B.S.C.E.
Kearney, Katherine	Kearneysville	Special A.&S.
Keller, Arch Loran	Middlebourne	Soph., B.Sc.
Kelley, Samuel Allen	Morgantown	Soph., B.Sc.
Kendrick, William Henry	Morgantown	Soph., B.Sc.Agr.
Kennedy, John James	Fairmont	Sen., B.Sc.
Kennedy, James Edward	Boothsville	Jun., A.B.
Kerns, George	Charleston	Soph., A.B.
Kerr, Harman Haller	Davis	Fresh., A.B.
Kersting, Eugene Josiah	Clarksburg	Fresh., A.B.
Kilgore, Harlie Martin	Morgantown	1st Year Law
King, Benj. Franklin	Scottdale	1st Year Law
King, Benj. Walter	Morgantown	1st Year Law
A.B., West Virginia University, 1909.		
King, Harry William, Jr.	Wheeling	Special Law
Kirk, Jose de Almeida	Valenca, Brazil	Jun., B.S.E.E.
Koon, Cline Morgan	Monongah	Fresh., B.Sc.
Kumler, Louise Hutcheson	Carmichaels, Pa.	Soph., A.B.
Kumler, Katherine Walter	Carmichaels, Pa.	Sen., A.B.
Laidley, Bradford Beuhring	Charleston	Fresh., B.Sc.
Lambdin, Allen Bennett	Keyser	Jun., B.S.E.E.
Lambert, Oscar Doane	Red Creek	Fresh., A.B.
Lekston, Roman	Monongah	Fresh., A.B.
Lemley, Fred Leigh	Burton	Soph., A.B.
Levy, Jay Berthrand	New Cumberland	2nd Year Law
Lewellyn, Frank Bowman	Morgantown	Sen., A.B.

Lewis, Anna	Mason	Fresh., A.B.
Lightner, Eli	Clarksburg	Special A.&S.
Linton, William Lloyd	Wellsburg	Special A.&S.
Liter, Bess McVey	Point Pleasant	Soph., A.B.
Lively, Elsey L.	Roseville	Sen., B.Sc.Agr.
Lively, William Thompson	Charleston	1st Year Law
Lough, William Cleveland	Cameron	Sen., B.Sc.
Lusher, Leland Carter	Ben Lomond	Special Law
Mac Rae, John Alexander	Morgantown	Jun., A.B.
Madigan, Frank	Morgantown	Fresh., B.S.E.E.
Manear, Ruth	Morgantown	Fresh., A.B.
Manley, Percy Cyrus,	Monongah	Fresh., B.Sc.Agr.
Marcum, Homer Burgess	Ceredo	1st Year Law
Marr, Harold Burl	Mannington	Soph., A.B.
Marshall, Ralph Sherman	Connellsville, Pa.	Fresh., B.Sc.
Martin, Cullen Guile	Clarksburg	Sen., B.S.M.E.
*Martin, Leona Mabel	Morgantown	Fresh., A.B.
Martin, Truman Morris	Newell	Soph., A.B.
Maxwell, Ida Ruth	Morgantown	Soph., B.Sc.
McConkey, Orie	Clarksburg	Grad., A.&S.
A.B., West Virginia University, 1903.		
McConnell, Nell Margaret	Sherrard	Jun., B.Sc.
McCreery, Clara Bell	Morgantown	Fresh., A.B.
McCrum, Harold Bernard	Aurora	Soph., A.B.
McCulloh, Mary Demaree	Fairmont	Fresh., A.B.
McCuskey, Frank Crim	McMechen	Fresh., B.Sc.
McDonald, Logan	Sycamore	Sen., B.S.C.E.
McDonald, Brown	Sycamore	Soph., A.B.
McGarry, John Henry	Shenandoah Jct.	Special Law
McGarry, Edmund Daniels	Shenandoah Jct.	Fresh., A.B.
McIntyre, Dennis Selkirk	Hepzibah	1st Year Law
McIntyre, Leslie Playford	Middlebourne	Fresh., A.B.
McKisson, Elsie Alice	Sistersville	Fresh., A.B.
McMillen, Herbert	Masontown	Fresh., B.Sc.
McMinn, Thomas Roach	Morgantown	Sen., A.B.
McMinn, Vaun Davis	Jefferson, Pa.	Jun., A.B.
McNemar, William Vernon	Lahmansville	Jun., A.B.
Mealy, Frederick Earle	Morgantown	Jun., B.S.C.E.
Means, Guy Goffe	Grafton	Soph., B.Sc.Agr.
Meek, Ula Maree	Wellsburg	Fresh., A.B.
Meldahl, Horace Spencer	Charleston	Soph., A.B.
Miller, Earl Lazier	Morgantown	Fresh., B.S.C.E.
Miller, Alexander	Morgantown	Jun., A.B.

Miller, Roy Frank	New Martinsville	Fresh., B.Sc.
Miller, Joseph Shields	New Cumberland	Fresh., B.S.C.E.
*Minor, Helen	Morgantown	Fresh., B.Sc.
Mitchell, Spurgeon Pomeroy	Morgantown	1st Year Law
Mitchell, John Barton	Morgantown	Special Eng'g.
*Moffett, Benj. Harrison	Shinnston	Fresh., B.Sc.
Moler, Philip Randolph	Charles Town	Soph., A.B.
Montgomery, Sam'l Beauregard	Kingwood	Special Law
Montgomery, Allen Guy	West Liberty	Soph., B.Sc.
Moon, Charles	Morgantown	Grad., A.&S.
B.S.C.E., West Virginia University, 1910.		
Moon, Emily Elizabeth	Morgantown	Fresh., A.B.
Moore, Susan Maxwell	Morgantown	Grad., A.&S.
A.B., West Virginia University, 1909.		
Morgan, Frederick Bruce	Ravenswood	2nd Year Law
Morris, Margaret Elizabeth	Cumberland, Md.	Fresh., B.Sc.
Moser, Harry Newton	Smithfield, Pa.	Special A.&S.
Mosteller, Georgie Fay	Mannington	Fresh., A.B.
Muldoon, Ralph Wickliffe	Morgantown	Fresh., B.Sc.Agr.
*Mugrove, Grover Cleveland	Fairmont	Fresh., B.Sc.Agr.
*Myers, Blanche Regina	Morgantown	Fresh., B.Sc.
Newlon, John Hawker	Clarksburg	Fresh., B.S.E.E.
Nicholson, Gillespie Blaine	Cold Water	Fresh., A.B.
Nihoof, Frank McCormick	Boomer	Fresh., B.Sc.
Otto, Julia Elizabeth	Wheeling	Fresh., A.B.
Parsons, Katherine Ambert	Morgantown	Fresh., A.B.
Peoples, Guy	Cameron	Fresh., A.B.
Phillips, George Francis	Belington	Jun., B.Sc.
Pickenpaugh, Beulah Frank	Morgantown	Sen., A.B.
Pitzer, Thomas Clyde	Mannington	Sen., B.S.M.E.
Pocock, Herman Diedler	Morgantown	Grad., A.&S.
B.S., West Virginia University, 1911.		
Pool, Clark Francis	Chester	Sen., B.Sc.
Portman, George Henry	Rochester, Pa.	2nd Year Law
Posten, Roscoe Parriott	Morgantown	Sen., A.B.
Potter, Charles Edwards	West Alexander, Pa.	Fresh., B.Sc.Agr.
Preston, Edna	Huntington	Fresh., A.B.
Prickett, Clarence James	Fairmont	Sen., B.Sc.
Pugh, Clyde Charles	Wheeling	Sen., B.S.C.E.
Purinton, Helen Elizabeth	Morgantown	Jun., A.B.
Pyle, Herman Haymond	Middlebourne	Fresh., B.S.M.E.

Quirk, Robert Emmett	Mannington	Fresh., B.Sc.
Race, James Stuart	Fairmont	Fresh., B.Sc.
Reed, Robert Sidney	Boothsville	1st Year Law
A.B., West Virginia University, 1911.		
Reed, Bessie Jane	West Alexander, Pa.	Jun., A.B.
Reiner, Ada Eleanor Means	Morgantown	Soph., A.B.
Renz, Oscar William	Erie, Pa.	Fresh., B.Sc.
Reynolds, Lynden Eugene	Grape Island	Soph., B.Sc.Agr.
Reynolds, Landon Taylor	Princeton	Special Law
Richardson, Edwin Van	Shinnston	Fresh., A.B.
Riddle, James Harrison	Wheeling	Sen., B.Sc.
Ritchie, Charles	Macksville	Special Law
Robinson, Charles Stillman	Uniontown, Pa.	Jun., A.B.
Robinson, Harold Lee, Jr.	Uniontown, Pa.	Fresh., B.S.C.E.
Robinson, J. French	Elizabeth	Fresh., B.S.C.E.
Rohr, Harley Downton	Alum Bridge	Fresh., B.Sc.
Rokos, Marcalus	Morgantown	Fresh., B.S.M.E.
Ross, Myron Alcott	Morgantown	Grad., A.&S.
B.S., University of Pennsylvania, 1903.		
Ross, Nellie May	Hedgesville	Soph., B.Sc.
Roush, Lillian Coleman	Morgantown	Fresh., A.B.
Ryan, Lonnie Watterson	Morgantown	Grad., A.&S.
B.S., West Virginia University, 1911.		
Sander, Frank Vanderslice	Wheeling	Sen., B.Sc.
Sander, Christian, Jr.	Wheeling	Soph., B.S.M.E.
Sanger, Samuel Henry	Sanger	Sen., B.S.M.E.
Savage, Eva La Verne	Parkersburg	Fresh., B.Sc.
Savage, Fred Cameron	Charleston	Fresh., B.S.M.E.
Sayre, Watson Russell	Evans	Fresh., A.B.
Schaffer, Wilhelm	Charleston	Fresh., B.S.E.E.
Schenck, Walter Pattison	Connellsville, Pa.	1st Year Law
Schenerlein, Bernard Wallace	Wheeling	Fresh., B.S.M.E.
Schramm, Henry Clyde	Piedmont	Fresh., B.S.E.E.
Scott, Malcolm McCormick	Connellsville, Pa.	Fresh., B.Sc.
Scott, Pearl	Pennsboro	Fresh., A.B.
Seckman, John Randolph	Belmont	Fresh., B.S.M.E.
Sell, William Osborne	Charleston	Soph., B.S.C.E.
Shank, Bly	Philippi	Fresh., A.B.
Shanklin, John Andrew	Charleston	Fresh., B.S.M.E.
Sharps, Amos Beaty	Lumberport	Fresh., B.Sc.Agr.
Sheets, Lucie Wood	Wellsburg	Soph., A.B.
Sheets, Earl Wooddell	Lost Creek	Sen., B.Sc.Agr.
Shirkey, Wilbur Fiske, Jr.	Malden	Soph., B.Sc.
Shroyer, Andrew Frederick	Philippi	Fresh., A.B.

Shunk, Ivan Vaughan Detweiler	Morgantown	Jun., A.B.
Sinsel, Charles Arthur	Grafton	Fresh., B.Sc.
Skinner, Dean Cook	Morgantown	Soph., B.S.M.E.
Smith, Vivian Lloyd	Morgantown	Fresh., B.S.C.E.
Smith, Leola May	Morgantown	Sen., A.B.
Smith, Edith Scott	Morgantown	Sen., A.B.
Smith, Jett Lambert	Morgantown	Fresh., B.Sc.Agr.
Smith, John Lorentz	Buckhannon	Special Law
Smith, Boyd Milford	Elkins	Grad., A.&S.
LL.B., West Virginia University, 1910.		
Smith, Lee Allen	Morgantown	Grad., A.&S.
A.B., West Virginia University, 1908.		
Smith, Fred Manning	Morgantown	Soph., A.B.
Smith Susan Louise	St. Marys	Sen., A.B.
Smith, Ida Wells	St. Marys	Fresh., A.B.
Smith, Robert Weightman	Stuart	Fresh., B.Sc.
Smith, Ajax Telamon	Princeton	2nd Year Law
Snider, Clifford Raymond	Spencer	Soph., A.B.
Spangler, Robert Clifton	Peterstown	Soph., A.B.
Speer, Edgar Boyle	Morgantown	Jun., A.B.
Spiker, Elma Etta	Masontown	Special A.&S.
Spiker, Claud Carl	Masontown	Sen., A.B.
Springer, Charles Woodward	Morgantown	Jun., B.S.C.E.
Stanard, Olive Huffman	Enon	Fresh., B.Sc.Agr.
Starbuck, William Henry	Parkersburg	Jun., B.S.M.E.
Starkey, Lawrence Vincent	Ravenswood	Fresh., B.Sc.Agr.
Stealey, Mansfield Hamond	Middlebourne	Fresh., B.S.M.E.
Stealey, Louise	Clarksburg	Jun., A.B.
Steele Mary Pearl	Morgantown	Fresh., A.B.
Steele, Harriet Effie	Morgantown	Jun., B.Sc.
Steele, Nell Victoria	Morgantown	Grad., A.&S.
A.B., West Virginia University, 1910.		
Steorts, Aristotle	Keyser	Fresh., B.S.C.E.
Stevens, J. Thompson	Morgantown	Fresh., B.Sc.
Stewart, Edmond David	New Cumberland	Fresh., A.B.
Stewart, Melville	Glendale	Fresh., A.B.
Stewart, John Lawrence	Morgantown	Jun., B.Sc.
*Stoops, Lowry McElvaine	Benwood	Fresh., B.Sc.
Straton, Joseph Butcher	Williamson	Special Law
Strickler, Robert Mann, Jr.	Morgantown	Soph., A.B.
*Sturgiss, Anna Gans	Morgantown	Fresh., A.B.
Sutton, William Wallace	Reedsville	Special A.&S.
Sydenstricker, Harry Sydney	Morgantown	Soph., B.Sc.
Sydenstricker, Carl Raymond	Morgantown	Soph., B.S.M.E.

Tapp, Marion Ethel	Morgantown	Sen., A.B.
Taylor, Ernie Pearl	Morgantown	Grad., A.&S.
A. B., West Virginia University, 1904.		
Taylor, Blake	Elkins	Jun., B.S.C.E.
Taylor, George Edmond	Morgansville	Jun., B.S.C.E.
Taylor, Roscoe Shirley	Morgantown	Jun., B.Sc.Agr.
Teter, Dwight Hall	Philippi	Soph., A.B.
Teter, Charles Wilson	Philippi	Soph., A.B.
Tetrick, Claude Spray	Enterprise	Sen., B.S.C.E.
Thatcher, William Reynolds	Williamsburg	Grad., A.&S.
A.B., West Virginia University, 1911.		
Theakston, Pauline	Morgantown	Sen., A.B.
Thornhill, William Francis	Belington	Fresh., B.S.M.E.
Thrasher, Henry Wood	Morgantown	Jun., B.S.C.E.
Tickle, Thomas Gooch	Bluefield	Soph., B.Sc.
Tracy, Benj. Franklin	Wheeling	Soph., B.S.E.E.
Trent, William Woodson	Davis	Sen., A. B.
Tuckwiller, Eugene Anthony	Lewisburg	Soph., B.Sc.Agr.
Tyler, Emory Ledrew	Keyser	Special Law
Van Bibber, Cyrus Biggs	Huntington	2nd Year Law
A.B., West Virginia University, 1909.		
Van Devender, Mary	Spencer	Fresh., B.Sc.
Vandervort, Hu Swisher	Morgantown	Grad., Agr.
B.S.Agr., West Virginia University, 1911.		
Vandervort, John Paul	Morgantown	Jun., B.Sc.Agr.
Van Gilder, Elmer French	Fairmont	Sen., B.Sc.
Vieweg, George Bowers	Wheeling	Sen., B.S.M.E.
Walker, Clyde Le Guage	Fayetteville	Fresh., B.S.E.E.
Walkup, Lepps Allen Homer	Falling Springs	Sen., B.Sc.
Walters, Ota Gertrude	Clarksburg	Fresh., B.Sc.
Wanamaker, John	Leechburg, Pa.	Soph., B.Sc.
Warden, Rhea Watson	Grafton	Sen., A.B.
Warwick, Andrew Sitlington	Charleston	Fresh., B.S.M.E.
Waters, Gladys Mary	Morgantown	Sen., A.B.
Watkins, Miflin Marsh	Wheeling	2nd Year Law
*Weaver, Sabina Olive	Morgantown	Fresh., A.B.
Weeks, William Seward	Washington, D. C.	2nd Year Law
Wellman, Clyde Anderson	Huntington	1st Year Law
Weltner, Fred Paul	Brandonville	Fresh., B.Sc.
Wheat, Harry Grove	Davis	Sen., A.B.
Whelan, Joseph Morton	Bay Shore, N. Y.	Fresh., B.S.E.E.
White, Wilson Henry Stout	Morgantown	Sen., A.B.

White, Horance Laban	Bristol	Grad., A.&S.
A.B., West Virginia University, 1911.		
Whiting, Hunter	Glenville	Jun., A. B.
Wiestling. Sara Herr	Wheeling	Fresh., A.B.
Wilcoxen, Maxwelton	Huntington	Fresh., B.S.E.E.
Wilkinson, Joseph Emory	Hamlin	1st Year Law
Wilkinson, John Benj., Jr.	Logan	2nd Year Law
Williams, Edgar	Morgantown	Jun., A.B.
Williams, Glenn Foster	Clarksburg	2nd Year Law
Wilson, Adda Virginia	Sistersville	Soph., A.B.
Wilson, Chape	Academy	Fresh., A.B.
Wilson, Stanley Bruce	Moundsville	Soph., A.B.
Wise, John	Charleston	Fresh., B.S.M.E.
Wood, Cecil William	Hedgesville	Fresh., A.B.
Woodburn, John Bonar	Parkersburg	Fresh., B.Sc.
Woodford, Alberta Louise	Morgantown	Jun., A.B.
*Wright, Maxwelton, Jr.	Ceredo	Fresh., A.B.
*Yoke, French Arlington	Morgantown	Fresh., B.Sc.
York, John, Jr.	Kenova	Jun., B.Sc.

STUDENTS ENROLLED IN THE SCHOOLS

Allen, Rebecca Rector	Mineral Wells	Summer School
Anderson, Joseph Emberry	Cowen	Summer School
Anderson, Elizabeth	Morgantown	Music
Arbogast, Elmo Mead	Marlinton	Preparatory
Ash, Belvia Mae	Friendly	Summer School
Atherton, Flora	Chambersburg, Pa.	Night Class
Atkeson, Mary Meek	Morgantown	Music
Atkins, Iris May	Weston	Summer School
Austin, Oakley	Elm Grove	Agr. School
Bailey, Garland Howard	Giatto	Preparatory
Baird, Hallie Adella	Elm Grove	Summer School
Baker, Marguerite	Morgantown	Music
Baker Benjamin	Morgantown	Fine Arts
Ballou, Henry Cornell	Cadillac, Mich.	Preparatory
Barker, Shelby Aaron	Morgantown	Night Class
Barnes, Ina Grace	Buckhannon	Summer School
Barns, Caroline Watson	Fairmont	Summer School
Bartholow, Sallie Cornelia	Washington, D. C.	Summer School
Batten, Beryl	Morgantown	Music
Batten, Ruth	Morgantown	Music
Beaumont, John Herbert	Morgantown	Preparatory
Beckett, Ernest Clyde	Morgantown	Music
Beer, Blanche	Belington	Summer School
Bell, Earl Edward	Morgantown	Preparatory
Beltzhoover, Lucie Adele	Shepherdstown	Music
Bennett, Anna Vanden	Wellsburg	Summer School
Bishop, Ernest Edward	Morgantown	Preparatory
Bjornson, Edwin	Morgantown	Preparatory
Black, Margaret Alvina	Sistersville	Night Class
Blackburn, Wade Francis	Stahlstown, Pa.	Summer School
Blair, Charlotte Amy	Waynesburg, Pa.	Music
Blair, Maude Elizabeth	Keyser	Summer School
Blake, Charles Calvin	Lost Creek	Agr. School
Blenko, Grace Agnes	Point Marion, Pa.	Music
Board, Marion Lovell	Charleston	Summer School
Boehler, Louise Anna	Morgantown	Music
Bolton, Lillie Eiffel	Belington	Summer School
Bond, Syrus Orestes	Flemington	Summer School
Boseley, Bruce Hamilton	Newcreek	Night Class

Boughner, Ruth	Sistersville	Summer School
Bowers, Elizabeth	Wellsburg	Summer School
Boydston, Vinna Katherine	Fairmont	Summer School
Boyers, Flora Olive	Morgantown	Music
Brightwell, Blanche	Monessen, Pa.	Summer School
Brinkley, Rose	Sutton	Summer School
Brock, Lucy	Summersville	Summer School
Brookfield, Inez Parker	Smithfield	Summer School
Brookfield, Pearl Virginia	Smithfield	Summer School
Brookover, Harry Eugene	Morgantown	Summer School
Brooks, Morgan McClancy	Grafton	Summer School
Brown, Ella Selina	Cameron	Summer School
Brown, Elizabeth Edna	Morgantown	Night Class
Bryant, Nellie May	McDowell, Va.	Summer School
Bumgardner, Adam Gideon	Clarksburg	Summer School
Burdett, Thomas Swaar	Charleston	Preparatory
Burgess, Basil Spurlock	Huntington	Preparatory
Burkhardt, Marie Louise	Morgantown	Music
Burnett, Cassandra Courtney	Warren, O.	Music
Burns, Charles	Claysville, Pa.	Summer School
Burroughs, Eugene Scott	Clinton, Md.	Summer School
Butler, Lucy Evelyn	Fanlight	Summer School
Butler, Mina Mae	Fanlight	Summer School
Byers, Ella Louise	Grafton	Summer School
Cain, Emily	Cameron	Summer School
Carroll, Alan Keyser	Masontown	Agr. School
Carroll, Chelsea Trax	Uniontown, Pa.	Music
Casto, Grover Cleveland	Morgantown	Night Class
Cather, Maud Minshall	Morgantown	Music
Cather, Dennis Lile	Flemington	Preparatory
Chambers, Otis	Rolfe	Summer School
Chambers, Harriet	New Cumberland	Summer School
Chambers, Georgia Virginia	Moundsville	Summer School
Chancellor, Victor Fleming	Parkersburg	Agr. School
Chenoweth, Wheeler	Euclid	Summer School
Chrisman, Martha Virginia	Morgantown	Music
Clark, John William	Morgantown	Night Class
Clark, Nannye Martin	Meadow View, Va.	Summer School
Clark, Addison Armstrong	Morgantown	Night Class
Clarke, Jeanette	Morgantown	Music
Clayton, Bertha	Toll Gate	Summer School
Cokeley, Ross Benjamin	Harrisville	Summer School
Colborn, Bess	Scottdale, Pa.	Summer School
Cole, James Henderson	Wheeling	Preparatory

Conaway, Gertrude May	Barrackville	Summer School
Cook, Ella	Cameron	Summer School
Coombs, Edith Ellwood	Morgantown	Music
Cooper, Evelyn Marie	Cameron	Preparatory
Cooper, Cora	Harrisville	Summer School
Coplin, Lucy May	Cairo	Summer School
Cottrill, Edith Reed	Pennsboro	Summer School
Cottrill, Frederick Martamore	Salem	Summer School
Courtney, Wilma Marie	Morgantown	Music
Cox, Margaret Elizabeth	Morgantown	Art
Cox, Anne Rogers	Morgantown	Music
Cox, Anna Grace	Millwood, Va.	Night Class
Cox, Winifred	Morgantown	Summer School
Cronin, Harry Raymond	Richwood	Preparatory
Cross, Charles Erle	Morgantown	Agr. School
Crumm, Grace	St. Marys	Summer School
Cunningham, Nelle Rebecca	Pt. Marion, Pa.	Preparatory
Currey, Percy Howell	Flemington	Preparatory
Dalinsky, Bessie	Morgantown	Music
Davis, Marguerite Jane	Morgantown	Music
Davis, Orin Hoover	Charleston	Preparatory
Davis, Grace Catherine	Leivasy	Summer School
Davis, Veda Irene	Salem	Summer School
Dawkins, Ruth	Sandyville	Summer School
Dawson, Lottie Ethel	Elizabeth	Summer School
Dawson, Pansy Byrl	Clarksburg	Music
Dawson, Haymond Wesley	Lost Creek	Agr. School
DeBrocq, Edgar	Point Marion, Pa.	Music
Demoss, Bertha Lee	Morgantown	Music
Deusenberry, Ruby Dale	Morgantown	Fine Arts
Devlin, Charles James	Point Marion, Pa.	Preparatory
Dews, Maria Ellington	Mountain Cove	Summer School
Dille, Mary Ethel	Morgantown	Music
Dixon, Ida Amanda	Rowlesburg	Music
Donham, Asia Mildred	Fairmont	Music
Dorrell, Martha	Morgantown	Preparatory
Dorsey, Bessie Gay	Short Creek	Summer School
Downey, Susan Josephine	Wellsburg	Summer School
Drennen, Mary Effie	Spencer	Summer School
Dubois, Emma Blanche	Morgantown	Night Class
Duer, Mary	Sandyville	Summer School
Duling, Irl Noel	Morgantown	Preparatory
Duncan, Carl Ray	Uffington	Preparatory

Duncan, J. Walter	Adamston	Summer School
Duncan, Mary Martha	Fairmont	Music
Dunham, Florence Clayton	Morgantown	Music
Edmundson, Richard H.	Morgantown	Night Class
Egbert, Alberta Ruth	Morgantown	Music
Ekas, Marguerite	Natrona, Pa.	Summer School
Elliott, Genevieve Caldwell	Terra Alta	Music
Ellis, Alfonso Lee	Princeton	Preparatory
England Leo	Morgantown	Night Class
Erwin, Mary Elizabeth	Ronceverte	Summer School
Estep, Edith Ensell	Morgantown	Home Economics
Evans, Mary	Grafton	Summer School
Evans, George Morgan	Morgantown	Summer School
Everhart, Edna Brown	Morgantown	Music
Ewing, Anna	Viola	Summer School
Ewing, Alice	Moundsville	Summer School
Farley, Katie Theresa	Charleston	Summer School
Farmer, Oscar Leonard	Savannah, Ga.	Summer School
Ferguson, John	Cottageville	Summer School
Fetty, Daisy Winifred	Farmington	Music
Fetty, Virginia Myrtle	Gay	Summer School
Fike, Arthur	Terra Alta	Preparatory
Fisher, Ruth Mary	Morgantown	Preparatory
Fitch, Katherine Finnell	Morgantown	Art
Fleming, Edith Hall	Cambridge	Summer School
Fling, Elsie Francis	Morgantown	Music
Fling, Fae	Morgantown	Music
Foley, Irene Staunton	Grafton	Summer School
Forman, Nancy Blanche	Amboy	Summer School
Forman, Maucealeene	Morgantown	Music
Fortney, Willis	Independence	Summer School
Fox, Francis Louise	Clendenin	Summer School
Fravel, Mary Stewart	Poca	Fine Arts
Frey, Pauline Marguerite	Ripley	Summer School
Friedman, Nettie	Fairmont	Music
Friend, Wenona Elizabeth	Morgantown	Music
Fullerton, Ida Keyser	No. Kenova, Ohio	Summer School
Gandy, Frank Warren	Terra Alta	Summer School
Garrison, Lillian Knight	Morgantown	Music
Garrison, Blanche Edith	Wadestown	Music
Gaschler, Emma Clara	Morgantown	Music
Gaskill, Rose Elizabeth	Fairmont	Music

Gaskins, Leola Ethel	Fairmont	Summer School
Gaughan, Sadie	Mannington	Summer School
Gaughan, Agnes Bernadine	Mannington	Summer School
Genin, Olga	Morgantown	Music
Gibbons, Teresa	New Martinsville	Summer School
Gibson, Mabel Lillian	Masontown	Music
Gibson, Wayne Earl	Salem	Summer School
Gibson, Emma Florence	Scottdale, Pa	Summer School
Gibson, Blanche	Sutton	Summer School
Giddings, Amy Hathaway	Morgantown	Music
Glasgow, Alma	Moundsville	Summer School
Glover, John Franklin	Morgantown	Preparatory
Glover, Sarah Elizabeth	Morgantown	Music
Golden, William Berton	Flatwoods	Summer School
Gorby, John Henry	New Martinsburg	Summer School
Gorby, Urie See	Mount Pleasant, Pa.	Summer School
Graber, Gordon Lawrence	Pittsburg, Pa.	Preparatory
Green, Mary Purinton	Morgantown	Music
Green, Ethel Averill	Morgantown	Summer School
Gregg, Aaron Lambert	Middlebourne	Summer School
Gregg, Margaret Virginia	Morgantown	Music
Gregory, Alfred Fleming	Kovan	Summer School
Griffith, Mabel Marie	Morgantown	Music
Groves, Artie Russell	Cuzart	Preparatory
Groves, Maude	Earl	Summer School
Gullette, Mabel Enoch	Wellsburg	Summer School
Guthrie, James Ray	Morgantown	Agr. School
Hagan, Arthur Michael	Hero, Pa.	Preparatory
Hagerty, Mary Elizabeth	Charleston	Summer School
Haines, Blair Monroe	Romney	Preparatory
Hale, Marguerite	Weston	Summer School
Hall, Wilburn	Logan	Summer School
Hall, Frederick Arthur	Wheeling	Summer School
Hall, Viola Myrtle	Morgantown	Music
Hall, Roy Olney	Morgantown	Night Class
Hall, Belle Protzman	Morgantown	Night Class
Hamilton Estelle	Fairmont	Music
Hamilton, Elvin	Richwood	Preparatory
Hammond, Lillie Irene	West Union	Summer School
Hanford, Josephine	Morgantown	Music
Hanford, James	Morgantown	Preparatory
Hanifan, Floyd	Elkins	Summer School
Hardesty, Mearle	Morgantown	Music

Hardy, Edith Lucretia	Morgantown	Art
Harper, Hildah May	Hurlock	Summer School
Harper, Charles Nicholas	Riverton	Summer School
Harris, Ernest Mullen	Morgantown	Summer School
Harrison, Louise Snodgrass	Martinsburg	Summer School
Hartigan, Mary Virginia	Morgantown	Music
Hathaway, Mildred Beatrice	Morgantown	Music
Hawkins, Opie Maud	Pullman	Music
Haymond, Marie Boggess	Fairmont	Music
Haymond, Floydia Helen	Salem	Summer School
Hedrick, Asa Addison	Mt. Hope	Summer School
Heiskell, Bess	Davis	Music
Heiskell, Edgar Frank	Davis	Preparatory
Hendershott, Nanon Loraine	Moundsville	Summer School
Hertzog, William Clyde	Shinnston	Summer School
Hodges, Grace Mabelle	Morgantown	Music
Holden Theodore	Harlin	Summer School
Holroyd, Annie Lee	Athens	Summer School
Holt, John Howard, Jr.	Moundsville	Music
Hoover, Stella Mae	Harrisville	Summer School
Hough, Ethel Rebecca	Morgantown	Music
Houghton, Mabel Gledden	Morgantown	Music
Howell, Ora Neta	Spencer	Summer School
Hoylman, Joseph Newton	Bramwell	Summer School
Hubbs, George	Glen Easton	Summer School
Huey, Lowry Burchinal	Mannington	Agr. School
Humphreys, Sallie	Organ Cave	Summer School
Hurst, Florence	Scottdale, Pa.	Summer School
Hutchinson, Blanche Cook	Welch	Summer School
Hutchinson, Frank Ehlen	Fairmont	Preparatory
Ice, Martha Byrd	Farmington	Night Class
Jackson, Lilith Rebecca	Follansbee	Summer School
Jacobs, Edna May	Fairmont	Music
Jacobson, Bertie	Morgantown	Music
Jarvins, Lucy Jane	Charleston	Summer School
John, Lemuel Nimrod, Jr.	Morgantown	Preparatory
Johnson, Lewin Andrew	Union	Preparatory
Johnson, Jettie Evelyn	Anawalt	Summer School
Jollie, Effie M.	Proctor	Summer School
Jones, Bertha Constance	Morgantown	Music
Jones, Margaret	Morgantown	Night Class
Joseph, Marie	Morgantown	Music

Keck, Mary Morrison	Morgantown	Music
Keener, James Quinter	Morgantown	Agr. School
Keith, Todd	Harrisville	Summer School
Kelley, Orlando Alfred	Morgantown	Summer School
Kelley, Edna Marguerite	Morgantown	Fine Arts
Kimble, Brison Edwin	Hambleton	Night Class
Kinet, Lawrence, Jr.	Fairmont	Summer School
King, John Tolbert	McMechen	Summer School
Kinsey, Jackson Clyde	Mannington	Music
Kline, Roma Irene	New Martinsville	Summer School
Knapp, Mary Gray	Morgantown	Preparatory
Knowlton, Helen Riggan	Morgantown	Music
Koelz, Frederick Rost	Morgantown	Night Class
Kunkel, Marguerite Elizabeth	Wellsburg	Summer School
Lambert, Fred Bussey	Barboursville	Summer School
Lambert, Florence Eugenia	Pennsboro	Summer School
Lambdin, Janet Denham	Keyser	Preparatory
Lambdin, Marjorie	Keyser	Night Class
La Rue, Ethel May	Morgantown	Fine Arts
Law, Stella Myrtle	Cairo	Summer School
Lawson, Lawrence Wells	Logan	Preparatory
Lazear, John Henry	Fulton	Summer School
Leatherwood, Carl Paxton	Wheeling	Preparatory
Lemley, Delilah Rosa Lea	Morgantown	Summer School
Lemon, Myrtle Alice	Terra Alta	Summer School
Leps, Fannie Buxton	Keyser	Summer School
Lewis, Jennie	Wellsburg	Summer School
Lewis, Virginia Shawkey	Hampton, Va.	Summer School
Lewis, Anna Margaret	Wellsburg	Summer School
Lewis, Mary Christine	Morgantown	Fine Arts
Liller, Niota	Purgitsville	Summer School
Lilly, Paris Ivan	Barn	Summer School
Lindley, Laura Mabel	Washington, Pa.	Summer School
Loar, Lewis Moses	Morgantown	Agr. School
Lockard, Goldie Addell	Point Marion, Pa.	Music
Loper, Rena Virginia	Wheeling	Summer School
Loudin, Sallie Fogg	Beverly	Summer School
Lough, Charles Melvin	Cameron	Summer School
Lucas, Mabel Weaver	Morgantown	Music
Luzader, Everett Ainsley	Morgantown	Summer School
Lynch, Clarence Arnett	Clarksburg	Summer School
Lynch, Mabel Florence	Middlebourne	Summer School

Maderia, Irene Elizabeth	Morgantown	Music
Mann, Channing Livingston	Parkersburg	Agr. School
Marsh, Grace	Sherrard	Summer School
Marsh, Stella	Sherrard	Summer School
Marsh, Cleophas	Philippi	Summer School
Marshall, Anna May	Connellsville, Pa.	Summer School
Martin, Esther Elnore	Metz	Music
Martin, Eva Johnson	Sistersville	Summer School
Martin, Leroy Jehu	Grafton	Summer School
Mason, Guy Earle	Shinnston	Music
Mason Leta	New Martinsville	Summer School
Mattson, Ellen Anna	Morgantown	Music
May, Lucy Catherine	Dovesville, Va.	Music
McBee, Claude	Independence	Summer School
McBee, Lena Griffin	Independence	Summer School
McCabe, Kate Shipley	Hollidays	Summer School
McCleary, Grace	Woodruff	Summer School
McClintock, Mildred	Harnedsville, Pa.	Summer School
McCoy, Vinetta	Sistersville	Summer School
McCrackin, Thomas Wesley	Edenborn	Summer School
McCray, Mary	Weston	Summer School
McCuskey, Nettie	Cameron	Home Economics
McCuskey, Ora Mae	Cameron	Summer School
McDougal, Ora	Pennsboro	Summer School
McCullock, Mary	Pt. Pleasant	Preparatory
McElhaney, Alice Catherine	Dunbar, Pa.	Summer School
McElhaney, Izetta Blanch	Dunbar, Pa.	Summer School
McGee, Pearl Roy	Charleston	Summer School
McKelvy, Rhoda Forrester	Wellsburg	Summer School
McKinney, Emory Foster	Fairmont	Library Science
McMillen, Mabel	Masontown	Summer School
McMullen, Ida Lulu	Pine Grove	Summer School
McVeigh, Ada Evelyn	Thomas	Summer School
Meek, Ellen Mehollin	Moundsville	Summer School
Menear, Lenore	Independence	Summer School
Menefee, Ida Florence	Keyser	Summer School
Mestrezat, Mary Helen	Morgantown	Music
Metzler, Helen Lucile	Morgantown	Music
Miles, Flora	Buckhannon	Summer School
Miller, Ruth Emma	Fairmont	Music
Miller, William Frederick	New Cumberland	Preparatory
Miller, LeRoy Brooks	Morgantown	Music
Miller, Cora Mae	Wikel	Summer School
Miller, James Wesley	Williamstown	Summer School

Minear, Irene	Davis	Summer School
Minear, Lulu	Davis	Summer School
Mitchell, Elsie Elizabeth	Monessen, Pa.	Summer School
Montgomery, Isaac Scott	Spencer	Summer School
Moore, Fred VanVoorhis	VanVoorhis	Agr. School
Moore, Celia May	Porterwood	Summer School
Moreland, Sara Hunter	Connellsville, Pa.	Summer School
Morgan, Mary Ellen	Buckhannon	Music
Morris, Beulah	Morgantown	Music
Morris, Floyd Ellen	Pine Grove	Summer School
Morris, Mary Alice	Cassville	Music
Morrison, Ida Liberty	Grafton	Music
Morrow, Nannie Rodelia Cameron	Fairmont	Summer School
Moyers, Ova May	Harrisville	Summer School
Mulvey, Virginia Catherine	Alma, Mich.	Music
Murdock, Henriette Edith	Kingwood	Music
Musgrave, Mary	Clarksburg	Summer School
Nestor, Silas James	Valley Furnace	Summer School
Newlon, Wilson Earle	Shinnston	Agr. School
Newlon, Dellet	Grafton	Summer School
Newman, Dora Lee	Glendale	Summer School
Nicholls, Adele Emelia	Morgantown	Music
Niedermyer, John William	Benwood	Preparatory
Noland, Velda	Davis	Summer School
Parshall, Mary	Uniontown, Pa.	Music
Parsons, Cornelius Robert	Porterwood	Summer School
Patterson, James Howard	Sutton	Summer School
Pauley, Geraldine	Waynesburg	Summer School
Paxton, Lizzie Frances	Walton	Summer School
Pearcy, Una Virginia	Morgantown	Music
Peck, Wilmer Sue	Athens	Summer School
Pedicord, Harry Lewis	Benwood	Summer School
Pedicord, Aletha Bell	Benwood	Summer School
Pepper, Wade	Flemington	Preparatory
Peters, James Thomas	Dothan	Summer School
Pickett, Winifred	Moundsville	Summer School
Polley, William Albert	Benwood	Preparatory
Pollock, Rebecca Luella	Waynesburg, Pa.	Night Class
Pomeroy, Caroline	Wellsburg	Summer School
Post, Margaret	Morgantown	Music
Posten, Elizabeth	Morgantown	Music
Price, Mildred Louise	Morgantown	Music

Price, Mary Belle	Morgantown	Music
Price, Goldie Mildred	Morgantown	Fine Arts
Rader, Anna Madge	Persinger	Summer School
Reckard, Oscar James	Clifton Mills	Summer School
Rector, Lila Clare	Grafton	Summer School
Reed, Rebecca	Wheeling	Summer School
Reeves, John Solomon	Morgantown	Preparatory
Reeves, Sally Quinby	Morgantown	Art
Renner, Daisy Bell	Mt. Morris, Pa.	Music
Riggs, Robert Alexander	Welch	Summer School
Riggs, Emily Esther	Wellsburg	Summer School
Rightmire, Ella Orr	Parsons	Summer School
Robbins, Ruth	Morgantown	Music
Robertson, Henry Clay	Charleston	Summer School
Robinett, Lillie Hoge	Athens	Summer School
Robison, Anna Louise	Point Marion, Pa.	Summer School
Ross, May Darling	Morgantown	Fine Arts
Russell, Leila Alethea	Rock Hill, S. C.	Summer School
Ryder, Virgie May	Morgantown	Music
Sadler, Lorenzo Laban	Salem	Summer School
Sanders, John Augustus	Oceana	Preparatory
Sanderson, Cecil Blandford	Morgantown	Music
Sanford, Alice Wentworth	Moundsville	Summer School
Sapp, Minnie May	Tunnelton	Summer School
Saunders, Lucy Baker	Charleston	Summer School
Sayre, Mary	Ripley	Summer School
Sayre, Clara	Ripley	Summer School
Scherr, Alma	Morgantown	Fine Arts
Schroeder, Harriett Grove	Grafton	Summer School
Scott, Erskine Lowry	Grand View	Agr. School
Semans, Georgia Anna	Morgantown	Preparatory
Shafer, Ethel Maude	Independence	Summer School
Sharpnack, Lindsay Ingram	Carmichaels, Pa.	Preparatory
Shean, Forrest	Morgantown	Agr. School
Shelby, Minerva	Morgantown	Preparatory
Shingleton, Juanita Geraldine	Grafton	Summer School
Shirkey, Wilma	Malden	Summer School
Shriver, Verella May	Morgantown	Preparatory
Shuman, Albert	Morgantown	Summer School
Shunk, John Heber Gerhardt	Morgantown	Music
Shuttleworth, Mary Louise	Morgantown	Music
Simmons, Hattie Anna	Churchville	Summer School

Simpson, Bertha W.	Follansbee	Summer School
Sisler, Rebecca Kate	Terra Alta	Summer School
Slusher, Arthur Groves	Masonville	Summer School
Smith, Ethel Gay	Morgantown	Music
Smith, Minor Francis	West Union	Night Class
Smith, Edward Conrad	Weston	Preparatory
Smith, Ada Ruth	Salem	Summer School
Smith, Anna	Weston	Summer School
Smyth, Edith Mabel	Van Voorhis	Summer School
Snodgrass, Jessie Pearl	New England	Summer School
Snodgrass, Ottis Rymer	Morgantown	Preparatory
Snyder, Vena Jane	Morgantown	Music
Snyder, Ruth	Albright	Summer School
Sowash, Carrie	Irwin, Pa.	Summer School
Spahr, Belle Lee	Kingwood	Night Class
Spangler, Mary Eliza	Johnstown, Pa.	Summer School
Spencer, Mabel Cora	Charleston	Summer School
Stanley, Dollie	Adlai	Summer School
Stansberry, Joseph Herschel	Romney	Preparatory
Steele, Warren Clinton	Walker	Summer School
Stemple, Isabel	Amboy	Night Class
Stemple, Minnie	Morgantown	Summer School
Straight, Willa Ethel	Fairmont	Music
Straight, Georgia Opal	Barrackville	Summer School
Strother, Phineas Sylvester	Smithville	Summer School
Stultz, Nellie Root	Vivian	Summer School
Sutherland, Margaret Root	Morgantown	Music
Sycafoose, Francis Newton	Webster Springs	Summer School
Tabler, Agnes Elizabeth	Wellsburg	Summer School
Taughenbaugh, Jane Campbell	Gettysburg, Pa.	Summer School
Taylor, Nelson Phay	Beverly	Summer School
Taylor, Martha Ellen	Bridgeport	Summer School
Theakston, Romaine	Morgantown	Preparatory
Thomas, Ashby Lora	Metz	Summer School
Thomas, Ethel	Markleysburg, Pa.	Summer School
Thomas, Otto Kirk	Wheeling	Agr. School
Thomas, Janet	Morgantown	Music
Thompson, James	Morgantown	Preparatory
Thrash, Albert Lemuel	Reedy	Summer School
Thrush, Richard William	Headsville	Summer School
Tibbets, Virginia Elizabeth	Beryl	Preparatory
Tomblyn, William Edwin	Flemington	Summer School
Toothman, Harry Franklin	Barrackville	Summer School

Tracy, Frank J.	Clarksburg	Summer School
Trail, Grover Cleveland	Beckley	Preparatory
Troxell, Rose	Weston	Summer School
Tucker, Mary Esther	Cassville	Preparatory
Tyson, Jesse Raymond	Berkeley Springs	Preparatory
Umbel, Oma	Markleysburg, Pa.	Summer School
Underwood, Silas Cleveland	Wellsburg	Summer School
Van Meter, Sallie Bell	Moorefield	Summer School
Varner, Elizabeth	Waynesburg, Pa.	Summer School
Wade, Sallie Shields	Morgantown	Music
Wagner, Enola	Grafton	Summer School
Wagoner, Ada	Keyser	Summer School
Wallen, Thelma Fontaine	Charleston	Summer School
Wambaugh, Olive Mae	Morgantown	Music
Waters, Ruby Belle	Morgantown	Art
Watkins, Wilbur Whally	Wheeling	Preparatory
Watson, Maude	Parkersburg	Summer School
Waugh, Bertha	Moatsville	Summer School
Weaver, James Plummer	Morgantown	Preparatory
Weaver, Jessie Beryl	Morgantown	Music
Weaver, Lulu May	Morgantown	Music
Weaver, Noel Price	Morgantown	Preparatory
Weeks, Mary Louise	Morgantown	Music
West, Neva Blanche	Glenville	Summer School
West, Mollie Christine	Hanna	Summer School
Westbrooke, Cordelia Delle	Willow	Summer School
Westbrook, Nettie	Willow	Summer School
Westfall, Daisy	Harrisville	Summer School
Wheeler, Rose Mary	Wellsburg	Summer School
Whelan, Julia	Weston	Summer School
Whetsell, Mabel Eleanor	Morgantown	Music
White, Dotia	Weston	Summer School
White, Virginia Ethel	Persinger	Summer School
Whitsel, Charley Ephraim	Little Birch	Summer School
Williams, Burleigh Basil	Cass	Summer School
Williams, Jenkin Lewis	Morgantown	Night Class
Williams, Forest Grey	Charleston	Preparatory
Williams, Ella	Buckhannon	Summer School
Wilson, Mabel	Pennsboro	Music
Wilson, Willa Wade	Morgantown	Home Economics
Wilson, Stella Rebecca	Harrisville	Night Class
Wilson, Ross	Hartley	Summer School

Wilson, Mae	Morgantown	Music
Wilson, Arthur Dixon	Chalk Hill, Pa.	Summer School
Wilson, Cora Ella	Belington	Summer School
Wise, Julia Arthena	Athens	Summer School
Woerner, Frank Otto	Moorefield	Summer School
Wolf, Lena	Morgantown	Music
Wood, Virginia Hopewell	Moorefield	Summer School
Woodford, Ina Juanita	Morgantown	Music
Woodford, Bessie Lenore	Morgantown	Fine Arts
Woods, Ralph Davis	Harrisville	Preparatory
Yarger, Hazel Estella	Morgantown	Preparatory
Yoakum, Cellie Jane	Beverly	Summer School
Yoke, Frank Roy	Morgantown	Summer School
Yontz, Christa Helen	Burkhart, Ohio	Summer School
Young, Sarah Adeline	Wade	Summer School
Zinn, Hazel May	Grafton	Summer School
Zinn, Lacy Glenn	Philippi	Agr. School

STUDENTS ENROLLED IN FARMER'S COURSE

Ashburn, James Paul	Reedsville
Beat, Lawrence N.	Mannington
Behrens, Edw. Charles William	Sherrard
Bennett, Hanson	Morgantown
Bowlby, Evans Plummer	Morgantown
Brooks, Ellis Walton	French Creek
Cather, Lawrence A.	Terra Alta
Farnsworth, Ralph	Troy
Fleming, Herbert Waitman	Cassville
Haller, Earl Stanley	Lyrcormell
Harner, Luther Vincent	Morgantown
Harner, William Ralph	Morgantown
Haught, Leslie H.	Morgantown
Huidekoper, Prescott	Romney
Kelley, Orlando Alfred	Morgantown
Law, Burleigh Aubrey	Newberne
Law, Royston D.	Burnt House
Lawson, Harry M.	Meadow Bluff

Lewis, James C.	Valley Grove
Linsing, Dallas	Morgantown
McGregor, David Graham	Cairo
Perry, Arthur K.	Junior
Protzman, Francis Marion	Morgantown
Reiner, John J.	Morgantown
Reynolds, Thurman	Grape Island
Russell, Arthur Prince	Williamstown
Shafer, Guy Carlton	Independence
Shanks, James M.	Morgantown
Shoulders, Charles Jesse	Horner
Singleton, Early Ingle	Racket
Springston, French	Troy
Stewart, H. M.	Glendale
Stewart, Stanley M.	Philippi
Swisher, Isaac Marion	Lost Creek
Thorn, James C.	Friendly
Tuckwiller, David	Lewisburg
Vandervort, Elmer R.	Morgantown
Warman, Harlie	Morgantown
Weisheit, Chas. F.	Parkersburg
Williams, Dr. A. R.	Tunnelton

STUDENTS ENROLLED IN THE WINTER COURSE IN HOME ECONOMICS

Alderman, Margaret	Morgantown
Briggs, Eleanore Lewis	Morgantown
Britton, L. C., Mrs.	Morgantown
Cady, S. J., Mrs.	Morgantown
Chez, Esther M.	Morgantown
Chitwood, Agnes Cady	Morgantown
Coad, Eleanor Manning	Morgantown
Courtney, W. H., Mrs.	Morgantown
Dickinson, Emma Real	Morgantown
Dorsey, Carrie A., Mrs.	Moundsville
Dorsey, Pearl	Moundsville
Douthat, Genevieve Sane	Morgantown
Douthat, R. M., Mrs.	Morgantown
Fulton, Lucy R., Mrs.	Sleepy Creek
Glasscock, Mabel Reynolds	Morgantown
Green, H. S., Mrs.	Morgantown

Green, Robert R., Mrs.	Morgantown
Heath, Virtue	Moundsville
Kelley, Eva	Morgantown
Leonard, Pauline Wiggin	Morgantown
Lewis, James C., Mrs.	Valley Grove
Limerick, Chas. H., Mrs.	Morgantown
Mackey, Elizabeth	Morgantown
Mastin, J. Anna, Mrs.	Morgantown
Maxwell, Melvina J.	Morgantown
Palmer, Chas.	Morgantown
Palmer, F. D., Mrs.	Fairmont
Poole, Gladys Guseman	Morgantown
Quenzell, C. H., Mrs.	Morgantown
Ridgeway, C. F., Mrs.	Morgantown
Sivey, Agnes Watkins	Morgantown
Sheldon, Clara Fleming	Morgantown
South, Winifred O.	Morgantown
Felton, C. R., Mrs.	Morgantown
Vickers, Kijo, Mrs.	Morgantown

STUDENTS ENROLLED IN THE SCHOOL OF METHODS FOR SUNDAY SCHOOL WORKERS

Arnold, Anna Maude	Moundsville
Arnold, Arthur Thomas	Moundsville
Burdette, Annie Strickler	Morgantown
Burgy, Anna Lee	Cameron
Cook, Mary Elizabeth	Cameron
Courtney, Ethel May	Randall
Dorsey, Pearl	Moundsville
Fitzgerald, Anna Velora	Cameron
Graham, Sara Katherine	Wheeling
Graham, Martha Virginia	Wheeling
Herod, Anna	Dunkard, Pa.
Hibbs, Ethel	Fairmont
Linger, Lafayette Sherman	Horner
Price, Blanche Elizabeth	Morgantown
Pierce, Blanche	Moundsville
Shumaker, Nellie Osa	Grafton
Snyder, Vena Jane	Morgantown
Stephen, Mabel Marvillah	Cameron
Withers, Ammon Barnes	Bridgeport

SUMMARY OF UNIVERSITY ENROLLMENT FOR 1911—1912.

THE COLLEGES

	CANDIDATES FOR DEGREES								SPECIAL			TOTALS		
	Grad.	Sen.	Jun.	Soph.	Fresh.	Male.	Female.	Total.	Male	Female.	Total.	Male.	Female.	Total.
Arts and Sciences	16	45	36	56	126	177	102	279	10	4	14	187	106	293
Engineering	0	17	11	20	36	84	------	84	3	------	3	87	------	87
Agriculture	2	6	5	8	15	36	------	36	------	------	------	36	------	36
Law	1	14*	14*	21*	------	50	------	50	13	------	13	63	------	63
TOTALS	19	82	66	105	177	347	102	449	26	4	30	373	106	479

THE SCHOOLS

The School of Music	6	107	113
The Preparatory School	48	14	62
The School of Fine Arts	1	14	15
The School of Agriculture and Home Economics	19	3	22
The Summer School	77	206	283†
The School of Methods for Sunday School Workers	3	16	19
The Farmers Course	40	------	40
The Winter Course in Home Economics	------	35	35
The Night Classes	12	13	25
TOTALS,	206	408	614
Entire Enrollment at Morgantown	579	514	1093
Additional Enrollment in Agricultural Extension Schools	265	167	432
GRAND TOTALS,	844	681	1525‡

*Students in the College of Law are known as Third-year, Second-year, and First-year Students. †The total enrollment in the Summer School including those subsequent re-enrolled in some other college or school was 436. ‡Of this total 71 are residents of states other than West Virginia.

STUDENT ASSISTANTS

The following students, though not regularly appointed as members of the teaching force of the University, acted as laboratory assistants during the year:

In the Department of Chemistry:
FRANK VANDERSLICE SANDER

In the Department of Physical Training:
GEORGE WALTER GROW

In the Department of Physics:
JOSEPH KRAUSE GRUBB

In the Department of Zoology:
JOHN LAWRENCE STEWART

In the College of Engineering:
SAMUEL HENRY SANGER, GEORGE WALTER GROW, WALTER WESLEY GASKINS, GEORGE BOWERS VIEWEG, WALTER BERYL CROWL, THOMAS CLYDE PITZER

In the Department of Botany and Bacteriology.
IVAN VAUGHAN DETWEILER SHUNK

In the Department of Home Economics:
NELLIE MARGARET MCCONNELL

SUMMARY OF FACULTY, 1911-1912

Professors Emeritus	2
Professors	37
Associate Professors	9
Assistant Professors	7
Instructors	13
Assistants	7
Student Assistants	4
Library Staff	5
Experiment Station Staff	19
Total	99

ALUMNI ASSOCIATIONS

GENERAL ASSOCIATION

President	HERSCHEL C. OGDIN, '87	Charleston, W. Va.
Vice-President	WALTER H. SOUTH, '00	Morgantown, W. Va.
Secretary	D. M. WILLIS, '99	Morgantown, W. Va.
Treasurer	G. B. MILLER	Morgantown, W. Va.

EASTERN PANHANDLE ALUMNI ASSOCIATION

President	H. H. EMMERT, '88	Martinsburg, W. Va.
Secretary	C. E. MARTIN, '99	Martinsburg, W. Va.

WEST VIRGINIA UNIVERSITY CLUB OF WESTERN PENNSYLVANIA

President	G. H. F. HOLY	Pittsburg, Penna.
Vice-President	F. G. ROSS	Pittsburg, Penna.
Secretary-Treasurer	F. J. STONE	Pittsburg, Penna.

Executive Committee

F. G. ROSS G. H. F. HOLY F. J. STONE
J. N. CALVERT A. T. DAVENPORT

Annual reunion, third Friday in January.

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